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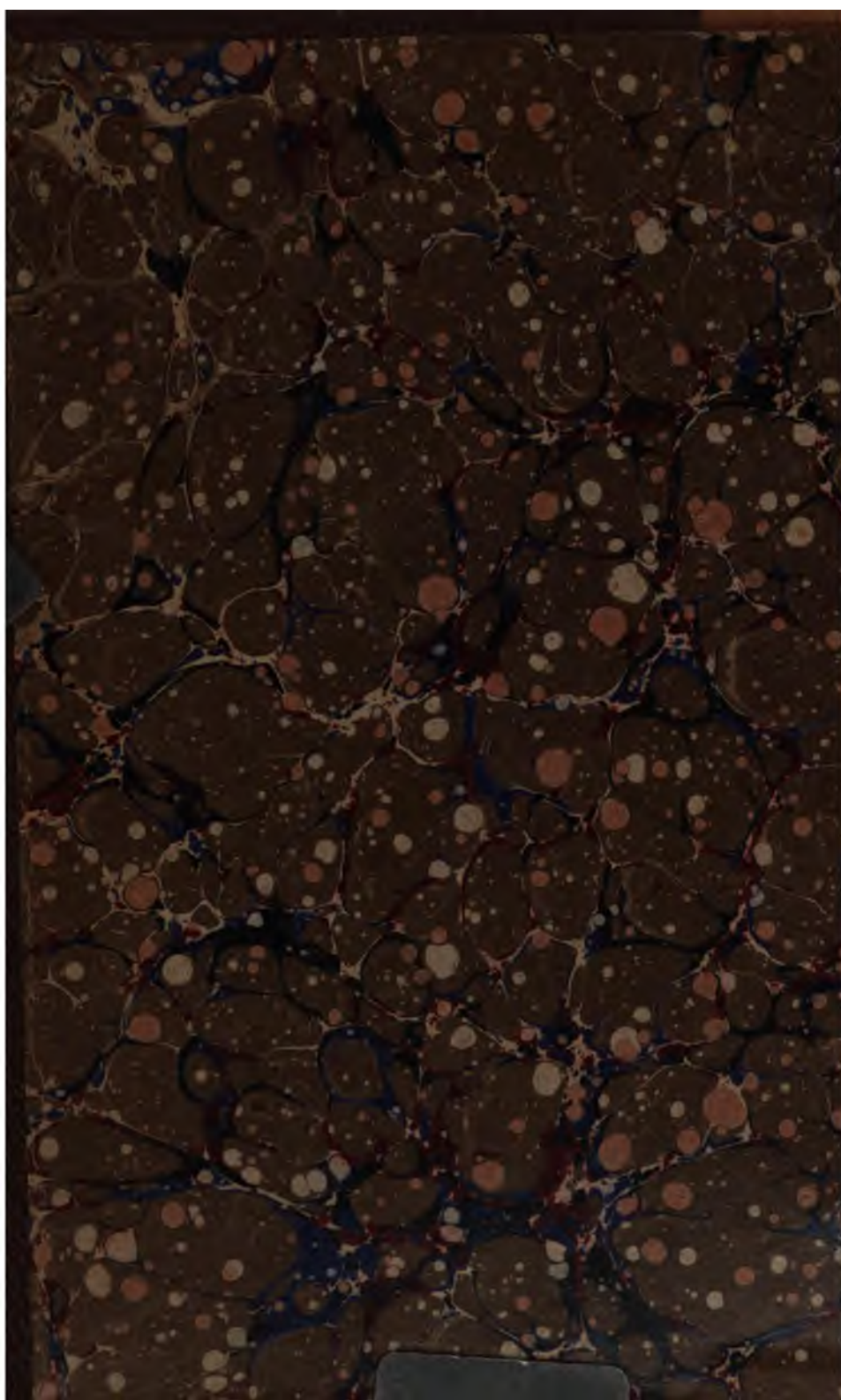
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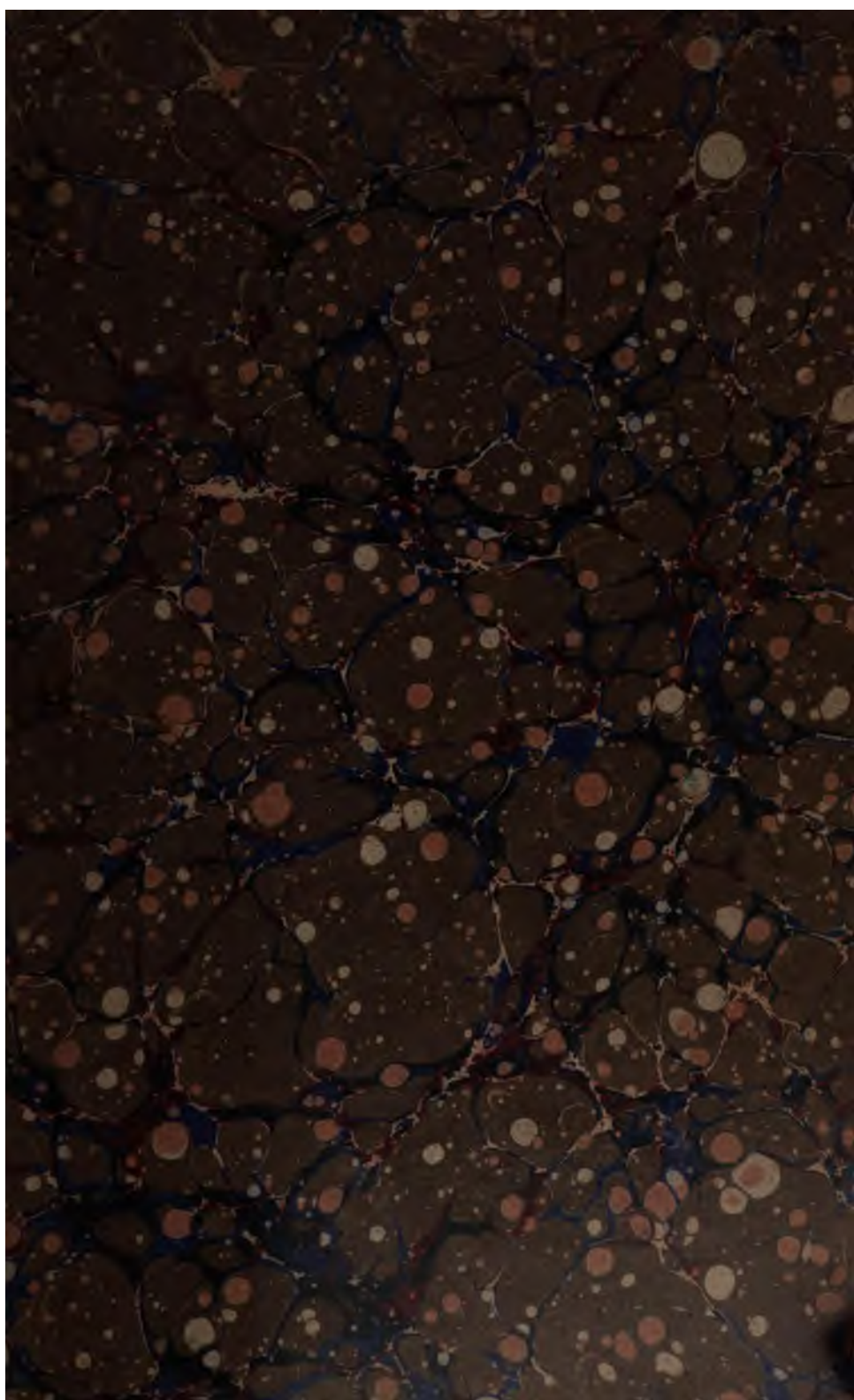
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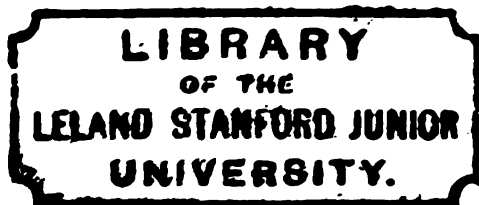
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THE INDUSTRIAL TRANSITION
IN JAPAN.

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THE INDUSTRIAL TRANSITION
IN JAPAN,

BY

YEIJIRO ONO, Ph. D.

AMERICAN ECONOMIC ASSOCIATION.

January, 1890.

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UNIVERSITY OF MICHIGAN,
Ann Arbor, Mich., October, 1889.

INTRODUCTION.

Industrial society is an integral part of the social organism, and its evolution is necessarily determined by those conditions which determine the evolution of society as a whole. In the course of European history many diverse phases of industry present themselves, but these always appear in strict harmony with the period of history to which they belong. In the development of industrial life from village-communism to that which showed itself in the Medieval guilds, from the guilds to the age of national competition, and from thence to the present *régime* of individual competition, each change has been accompanied by corresponding changes in law, in politics, and in the arts. And however strange these old industrial systems appear to modern eyes, they find a true defense in the conditions from which they sprang.

But it is not sufficient to conceive of an industrial system as the product of the age in which it exists. It is not alone a resultant factor; it is a causal factor as well. Whatever affects the methods of production and distribution tends, not only to revolutionize politics, but also to change existing social arrangements and to modify ethical ideas. Nothing illustrates this better than the social effects of machinery. In England, the development of machinery was followed by changes that were truly revolutionary in character. The yeoman who played

such an important part in the Puritan Revolution, and whose presence gave a peculiar charm to the rural economy of England, was forced out of society. Large factories arose and population began to crowd the towns. The seat of industry was shifted from the South to the North, and the industrial processes became diversified as well as localized. The commercial spirit which had first shown itself in the sixteenth century came to dominate the nation. Side by side with accumulated wealth, the working class, as it is now known, sprung up and became an important social factor. All these changes were accomplished within the short space of half a century. So striking were these changes that Gaskell, writing in 1833, says "A complete revolution has been effected in the distribution of property, the very face of a great country has been remodelled, various classes of its inhabitants utterly swept away, the habits of all have undergone such vast alterations, that they resemble a people of a different age and generation."¹

This industrial revolution may properly be described, to borrow the terms of a socialist, as the transition from the *Labour-régime* to that of *Capitalism*. It left society in a chaotic condition, and brought forth the new ideal of life which Carlyle indignantly denounced as the age of "working mammonism," in which "*cash payment*" is the sole "union-bond of man to man."² But the new era is itself transitional. Labor and capital, whose harmonious working is essential to material progress,

¹ *The Manufacturing Population of England*, p. 33.

² *Past and Present*, p. 126.

can not retain their present strained relations for any considerable period of time. There must emerge sooner or later from the agitations now engaging the attention of the Western world an adjustment which will again bring harmony and peace to Western society.

But we are not at present concerned with speculations suggested by European history. The object of the present paper is to trace the industrial transition now in progress in Japan, to suggest some measures by which the process of transition may be facilitated, and to speculate upon the consequences which are likely to follow in a society so long accustomed to primitive methods of industry. Those who are acquainted with the recent history of Japan will not doubt the pertinency of such inquiry. Until thirty years ago, Japan was under the rigid rule of Feudalism. The country was divided into sixty-four provinces, each having its own government, its own finance, its own money. Whether small or large, each of these provinces constituted an organism, independent industrially as well as politically. Each produced and consumed, increased and decreased, flourished and declined, independently of the others. Each was dominated by a feudal lord, with his body of retainers, who were supported with feudal grants. Below these there were traders, artisans, and farmers, who worked primarily for the welfare of the ruling classes, by whom they were held in contempt. The land was burdened with heavy taxes, and industry was held subservient to military purposes. However beneficent the Feudal system may have been in its historical functions, its social organization and current ethics were such that "no large and varied economic activity was possible."

How that Feudalism was overthrown; how the local independence was destroyed; how the whole country was united under the authority of a strong central government, it is no part of my present paper to relate. From these changes in political relations, many admirable results have followed. Communication has been opened, class-distinction has been abolished, intellectual activity has been stimulated. In fact a new ideal of life has been introduced, which is steadily yet unconsciously asserting itself in the very heart of the nation. But it is important to recognize that the present industrial organization is still the relic of Feudalism. As we shall see later, the distribution of population is mainly determined by feudal boundaries, the movement of working classes from one province to another being little, or none at all. The land-tax is still the basis of national revenue: agriculture is left to the hands of poor and ignorant tenants; and manufacture is pursued by the same methods and with the same tools as of old.

It is apparent that Japan is at present but half-transformed. Modern political institutions have been imposed upon a people whose industrial organization is essentially feudal. But the best results cannot be hoped from such a step, if the changes are to be arrested with the adoption of democratic forms of government. Industrial methods must likewise be transformed. For it is only modern industry that can support modern institutions. Aside from religion, science, and philosophy, whose influence cannot be ignored, it is industry that has developed the principle of individualism, which, however pernicious it may be in some directions, is an essential basis of social progress. Hence only among indus-

trial people are free institutions realized. Again, it is modern industry alone that is capable of maintaining the enlarged functions of modern government. The growth of nationality, the complexity of governmental machinery, the rise of public industries, all are tending to increase the pecuniary demands of the state. It is obvious that the recent acts of Local Self-government, or the establishment of Legislative bodies in 1890, will increase the expenditure of the government, and if industry remain in its present condition, further advance of political liberty in Japan will be impossible.

Yet we have reason to believe that the present situation is purely transitory. The growing intercourse with European nations, the promulgation of new laws and of a constitution, by which the rights and liberties of all are equally secured, and, above all, the provisions for universal education through the establishment of more than thirty thousand schools, cannot fail to quicken the energy of the people and to impart to them a new ideal of life. Machinery, also, which plays so prominent a part in Western civilization, may be introduced into Japan, provided only the conditions of labor and capital are adjusted to admit it. These combined influences will in all probability shorten for us the transitional period, which occupied in Europe the space of more than a century.

Indeed the course of recent events fully warrants us in expecting sudden and violent changes in the industrial system. Between December, 1886, and September, 1887, thirteen railroad corporations were chartered with capital of over forty million dollars. Over one thousand miles of line were projected. a mile-

age far in excess of that previously constructed and projected by both the government and public corporations. Again, there have been built within a few years thirty-three spinning factories, with spindles varying from 2,000 to 60,000 each. In almost all branches of industry, corporations are being formed, and an intense interest is manifested by a class of intellectual men who once held themselves above the vulgarity of industrial pursuits. Such facts put it beyond question that the industrial energy of the people is fully awakened, and if strong measures be taken either in revenue reforms or in the revision of commercial treaties, labor will begin to move, machinery will be introduced, and Japan will certainly adjust herself to the requirements of modern industrial life.

If then it be proper to characterize the present as a period of industrial transition, it is necessary to give some attention to the solution of such questions as arise from this fact, for such transition carries with it possibilities of evil as well as of blessing. The sudden introduction of labor-saving machinery on a large scale into a country whose industry has grown independently of such potential factors, must cause serious disturbances, and when these disturbances are exaggerated by misgovernment, they are liable to engender social evils which may make civilization a curse to the multitude of the people. But modern industry has grown so far that by analyzing its history we may hope to ascertain how much of present social evils is traceable to human injustice, and how much to natural tendencies. In the light of such analysis we may perhaps discover the order in which the required changes can be accomplished,

attended by the least danger ; or, by comparing the Japan of to-day with the Japan of former times, we may discover the peculiar dangers to which the country is exposed, and the measures necessary to prevent them.

In order to discuss these questions to any advantage, it will be necessary to examine carefully the present industrial status of Japan, and to inquire into the distribution of population, and the conditions of agriculture, manufacture, and transportation. In doing this, we shall depend mainly upon statistics and upon various official reports.¹ These will furnish the data upon which to build our speculations. Our subject, therefore, will be treated in the following three divisions :

The present industrial status of Japan.

Steps necessary to complete the Industrial Transition.

The probable social consequences of the industrial transition.

¹ Annual Reports published by the Department of Interior, 1882, 1883, 1886, 1888.

Annual Reports of the Bureau of Statistics, 1887.

Report of the Department of Agriculture and Commerce, 1887.

One accessible to French readers is *Résumé Statistique de L'Empire du Japon*, No. iii, Tokio, 1889.

1

The Industrial Transition in Japan.

I.

THE PRESENT INDUSTRIAL STATUS OF JAPAN.

1.—*Population.*

A glance at the map of Japan¹ will suggest to a thoughtful student what would be the natural distribution of her population. From the north-east to the south-west a chain of mountain ranges divides the main island into nearly equal parts. From these mountains many rivers, large and small, flow into the Japan Sea on the one side, and into the Pacific Ocean on the other, leaving a deposit of black, humid, vegetable soil in the valleys through which they flow. On the East the country is laid bare to the genial influence of the Tropical currents, while on the West it is exposed to the Arctic current, and subject to occasional storms and tempests. All through the South a deeply indented coast and inland seas afford a peaceful shelter for fishermen, and a broad highway for commerce. Thus the early settlers, led by unerring instincts, found comfortable homes in the southern and eastern coasts.

Scientific men have always shown great interest in the search for the origin of the Japanese people. From tradition, language, archæology, and historic geology, many arguments have been drawn in sup-

¹See map on pages 24-25.

port of theories which, though instructive, will probably be modified in the light of further investigations. It is, however, generally admitted that the present people of Japan is the composite of several ethnic races. Most probably Japan was once inhabited by the Aino, who descended from the Northern parts of the Asiatic Continent through the Saghalian islands; and most of the stone caves, pots, and bone instruments found throughout the islands are identified as the handy-work of these aborigines. The conquerors, or the present ruling race in Japan, were undoubtedly of Southern origin. When they landed in Kiushiu they found the country peopled by savage tribes. These they subjugated one by one, and making their way to the central part of the country, founded in 660 B. C., the capital of the Empire at Yamato. With this date begins the authentic history of the Japanese people.

For the first 1600 years all history seems to center about the coasts of the Inland Sea. There cities arose, trade was carried on, and battles were fought. Kyoto was afterward made the seat of the Imperial Court, in which literature and art gradually sprung up. Osaka was the chief centre of commerce, by both land and sea. But of events outside of this narrow compass little is known. Both in the Northern and Southern islands there were many localities ruled by *quasi*-independent chieftains. The Aino occupied the country for several centuries as far south as the present site of Tokyo, and they were conquered and driven to Yezo only after many royal expeditions. It was at the opening of the twelfth century that the Eastern Coast, known since then as *Kuwanto*, began to assume political importance. The establishment

of the First Duarchy in 1185 transferred to the East the chief centre of both civil and military authority. And from then until the end of the sixteenth century, when Feudalism was formally established, *Kuwanto* was the chief scene of military operations. During these centuries many large provinces were formed, and flourishing cities arose along the Eastern coast.

But the present distribution of the people depends mainly upon the influence of Feudalism as it was developed and maintained by the Tokugawa family. Up to this time Tokyo was but a country hamlet adorned with a small castle. It stood in the midst of swampy ground, and its inhabitants were known among the polished society of Kioto as Eastern boors. There it was that the far-sighted Iyeyasu, the founder of the Tokugawa family, after a successful struggle, built a magnificent castle and called his fellow-generals and soldiers to settle under its walls. To supply the wants and luxuries of the military class, a city soon sprung up, which at the close of the seventeenth century numbered 500,000 inhabitants.¹

With this as the centre, all the feudal provinces were united under a rigorous and unrelenting rule. The lords of these provinces numbered two hundred and sixty-eight, some of whom were attached to their suzerain by friendship and kinship, while others yielded obedience through force. Yet so well did the founder arrange friends and foes on the political chess-board, that no two neighbors were left friendly, and, one power checking the ambition of another, continual peace was maintained for two centuries and a half.

¹Griffis, *The Mikado's Empire*.

Feudal lords were obliged to leave their families as hostages at the Metropolis, and with their trains to pay a visit of homage to His Highness every other year. But as far as internal administration was concerned, each province was left in entire independence. Each had its own system of revenue and each maintained an independent military system. Each had its department of the Treasury, of Justice, of the Census, and of Public Works. The lord usually resided in his castle, which, with its high stone ramparts and strong towers surrounded with deep moats, overlooked the whole of the feudal city. Close by the castle dwelt his retainers, who in time of peace served him as civil officers. The parts of the city in which they lived were guarded with massive gates, at which sentries were posted to exclude all but the holders of special permits. Outside the gates were found markets, frequented by all sorts of merchants and artisans. The city as a whole was surrounded with fortifications, and every stranger who entered it was carefully watched.

In such a military organization of society, no economic force was free to work its natural results. Communication between neighboring provinces was slight. Roads were in a wretched condition. Although some little trade sprung up, it was of the nature of foreign rather than of domestic trade, being embarrassed by tolls and other political hindrances. Migration, so marked a feature of modern western society, was next to impossible. The unit of society being the family rather than the individual, property was owned in common, and controlled by him who was the head of the family. There was no way except that of adoption into a family, by which a man

could establish himself in a strange community. If by accident, or impelled by an adventurous spirit, one found himself beyond the boundaries of his own province, he was regarded with suspicion and hatred, and was without security either for life or for property. The nobility, whose right of possessing their estates depended on allegiance to their feudal superior, were content to serve as the defenders of society, while the trading and farming classes had no ambition beyond that of sharing in the simple round of duties which formed the essence of their quiet life. Under such conditions society continued to live on generation after generation. Dialects, provincialism, peculiar customs, indeed all the marks of a localized society, made their appearance in Japan.

Among the causes that determined the distribution of population throughout the country were the following :—the geographical situation of the various provinces, their territorial extension, and their financial administration.

(1.) For many obvious reasons, population grew faster in the sea coast provinces than in those situated in the interior. In the former we find two industries not to be found in the latter, fishing and shipping, by which many thousands of people were supported. The indirect influence also of these industries was of great importance. Their existence not only carried the division of labor one step further than would otherwise have been possible, but also furnished good and cheap manures for agriculture, and established a regular line of commerce with many large sea-ports. In the sea-coast provinces, therefore, manufactures were conducted on a greater scale, and there was more

enlightenment and activity among the people. This will explain largely why population is denser on both sides of the Inland sea and in the northwestern part of Kiushiu than in other parts of the island.

Again, those provinces which lie along high roads leading to Yedo (Tokyo) were especially prosperous, and in consequence supported a large population. These roads were frequented by the trains of feudal lords on their way to the court of Shogun, who travelled with five or six hundred men in their suite, and with all the pomp and dignity of their rank; and if one can imagine what vast amounts of money must have been dispersed by them, he can gain some idea of a very important factor in the distribution of wealth and population in feudal Japan.¹

(2.) The lord of a large province maintained a

¹Engelbertus Kempfer, who was a physician to the Dutch Embassy in Japan, and who travelled to Yedo along the Eastern coast twice, in 1691 and 1692, gives us the following observations: "It is scarce credible, what numbers of people daily travel on the roads in this country, and I can assure the reader from my own experience, having passed it four times, that *Tokaido*, which is one of the chief, and indeed the most frequented of the seven great roads in *Japan*, is upon some days more crowded, than the public streets in any of the most populous towns in Europe." He further observes that "the train of some of the most eminent among the Princes of the Empire fills up the road for some days. Accordingly, though we travelled pretty fast ourselves, yet we often met the baggage and fore-troops, consisting of the servants and inferior officers, for two days together, dispersed in several troops, and the Prince himself followed but the third day attended with his numerous court, all marching in admirable order. The retinue of one of the chief *Daimios*, as they are called, is computed to amount to about 20,000 men, more or less, that of a *Sjomio* to about 10,000; that of a Governor of the Imperial Cities and Crown-lands, to one, or several hundreds, according to his quality or revenues." *The History of Japan*. London 1727. Vol. II, page 429.

gigantic castle, under whose walls a city arose wherein manufactures were established to supply the wants of his many thousand retainers. This gave rise to an extensive commerce. With the notable exception of commercial sea-ports (most of which were suddenly enlarged after the dissolution of Feudalism) all of the great cities in Japan originated after this fashion. There, large wealth was accumulated and farmers found a good market for their product, and, other things being equal, population increased there faster than in small provinces.

(3.) Feudal provinces showed great diversity in their financial strength. In the first place, they differed in the systems of levying taxes. In some provinces, the land-tax, the main source of revenue, was as high as seventy per cent of the annual production, while in others it was but thirty per cent, which was considered then as the lowest tax. The methods of estimating the harvest, which was accepted as the basis of the tax, were also different. Again, in some provinces, there were established store-houses for grain, to provide against famines and other accidents; in some, taxes were remitted in the time of bad harvests, thus giving encouragement directly to agriculture and indirectly to commerce and manufacture. On the other hand, no regard was taken of the condition of the peasantry; cruel oppression and ruthless extortion were but too prevalent in the matter of taxation. Furthermore, most provinces issued paper money of different denominations. This being strictly local currency, all the evils of its inflation fell entirely upon the subjects of the province by which it was issued.

Later, in defiance of the laws of the Shogunate government, debased coins of silver and gold also were issued. At the dissolution of Feudalism there were twenty-three kinds of paper notes and forty-nine kinds of coins in circulation.¹ It is easy to see that these and other economic causes must have deeply influenced the prosperity of different provinces, and, therefore, must have modified the rates of the increase of population.

What the consequences of the foregoing physical, historical, and institutional causes were, may be studied from the accompanying map. In general, the dense population is found along the coasts of the Inland sea, on the eastern and northwestern coast of Hondo and on the western half of the Island of Kiushiu. While in the most thickly settled portion, namely, the province of Sétzu, over fifteen hundred persons are found in a square mile, all through the island of Yezo there are not more than five to a square mile. But when we examine the feudal provinces by themselves, we find no two, under the same physical circumstances, alike in density of population. Two neighboring provinces show the discrepancy of almost nine hundred persons to a square mile in an extreme case,² while a difference of one hundred is quite common. I have taken two localities for the sake of illustration,—the first includes the eight provinces east of Tokyo, along the Pacific coast, and the second set includes the nine provinces along the northern coast of the Inland sea.

¹Twenty-three coins in gold, nineteen in silver, five in copper and two in iron.

²The province of Owari has 1,331 against 433 in Mikawa.

A Map of Japan

SHOWING THE

Distribution of the People



Pacific Ocean.

I.		II.	
Province.	Population to a square mile.	Province.	Population to a square mile.
Musashi.....	1,010	Idzumi.....	1,186
Sagami.....	541	Sétzu.....	1,512
Idzu.....	321	Harima.....	495
Suruga.....	313	Bizen.....	641
Totomi.....	371	Bitchiu.....	478
Mikawa.....	433	Bingo.....	373
Owari.....	1,331	Aki.....	471
Isé.....	471	Suwo.....	517
		Nagato.....	300

If you take two provinces, one on the coast and the other in the interior, the difference is still greater. Compare the province of Bizen with Mimasaka, or the province of Suruga with Kai, where the difference amounts to over three hundred persons to a square mile. This fact is chiefly due to the rugged state of the interior, to the poor means of transportation, and to the consequent lack of good agriculture and of internal trade.

In general, the distribution of population does not seem to have undergone much change since the downfall of Feudalism. Although political and legal obstacles have been removed, there still remains a feeling of local attachment which deters men from abandoning the place of their birth. It is true that since 1880 quite a tide of emigration has been flowing to the northern province of Hokkaido, which by the year 1886 had reached a total population of eighty-six thousand. It is true also that certain publicists argue strongly the desirability of foreign emigration, and that some four or five thousand Japanese laborers have found their way to the sugar plantation of Hawaii, under the conditions of a treaty between Japan and that country. But on the whole it remains true that the Japanese show nothing of

that restless disposition which makes migration so prominent a feature in the life of the western world.

This fact, however, should not be taken as indicating that the industrial opportunities of the several provinces are equally developed. There is, for example, as marked a divergence in the rate of wages paid in the various provinces as in the density of population. In Osaka, a first-class farm laborer commands five yens per month; in Tokyo, two yens and a half; while in Kiushiu his pay ranges all the way from three yens in Saga to seventy sens in Kagoshima. The differences are equally remarkable in the wages of skilled laborers. Weavers of the interior, Kai, Shinano, and Kotsuké, earn seven yens and a half per month, but in other provinces they get from one yen eighty sens to five yens, the same grade of labor being taken as the basis of comparison. A still more significant fact is the diversity of the rates of wages in neighboring provinces. In both manual and skilled labor, the difference of the rates of wages in two localities, not fifty miles apart, often amounts to more than two hundred and fifty per cent. To cite an extreme case, Osaka and Kioto have been connected since 1877 by a railroad of twenty-seven miles length, yet the rate of farm wages in the former is five yens per month, against one yen and seventy-two sens in the latter. A member of the privy council gives us in a recent work (privately published in July, 1886) the following somewhat astonishing figures, which, though prepared for another purpose, bear directly on the matter in hand.

Table showing certain facts pertaining to public expenditure and the per capita products, income, and taxation, for certain localities.

Names of <i>Fu</i> and <i>Ken</i> .	Annual am't of national taxes redi- stributed per capita.		Annual am't of production per capita.		Sum total or annual in- come per capita.		The rate of national taxes per capita.	
	<i>Yen.</i>	<i>Sen.</i>	<i>Yen.</i>	<i>Sen.</i>	<i>Yen.</i>	<i>Sen.</i>	<i>Yen.</i>	<i>Sen.</i>
Tokyo— <i>Fu</i>	18	30	2	90	21	20	1	40
Ishikawa— <i>Ken</i>	90		8	20	9	10	1	60
Yamanashi— <i>Ken</i>	30		23	40	23	70	1	57
Miyagi— <i>Ken</i>	1	30	13	50	14	80	1	47
Kagoshima— <i>Ken</i>	60		3	90	4	50	1	47

If these figures are correct, they will afford some indication of the immobility of labor, and will furnish us an additional evidence of the fact that the dominating force in society is still feudal and anti-commercial.

If now we turn our attention to the proportion of urban and rural population, we shall see that many marked changes have taken place in the last twenty years. The war of the Restoration meant the destruction of local independence and the centralization of power. In 1872, the feudal lords were summoned to Tokyo and obliged to become permanent residents of that city as a class of nobles. The feudal grants of their retainers were commuted to terminable bonds issued by the new government. The destiny of the majority of these retainers is one of the most melancholy spectacles in the recent history of Japan. Placed in the position of a ruling class, they formed a race of men, most accomplished and highly sensitive to their duty and honor. It was the sentiments and actions of this class that played the most prominent part in the late political movements.

But on the other hand, they were careless, wasteful, and extravagant; and having received other feudal grants capitalized as interest-bearing bonds, some of them squandered their newly acquired property in pleasure, while others were cheated out of it by crafty merchants, and only within a few years, the most of them have been obliged to sell their home-steads, thus sinking into the listlessness of poverty from which they have no energy to awaken. Their mansions and neatly trimmed houses, which once adorned the out-skirts of a feudal castle, have now fallen into ruin; the place where they once stood being covered with tea and mulberry trees.

The immediate consequence of such sudden disappearance of the feudal classes was to strike a death-blow to the prosperity of castle towns. It was the chief function of these towns, as we have seen, to supply the wants and minister to the luxuries of the feudal classes. But with the decay, ruin, and dispersion of these classes, the source of life for these cities was taken away. Some of them, however, were created the seat of new local governments and adjusted themselves to the new *régime* without experiencing sudden and violent shocks. A few, favored with good natural locations, acquired new importance by the expansion of their internal trade. Yet there are to-day many castle-towns, perhaps more than one half the original number, that have no reason for their existence, except such as is found in the history of Feudalism and in the social conditions which Feudalism created. It is not strange that these should show signs of decay.

A careful comparison of the statistics of 1879 with those of 1886 reveals to us many interesting facts.

It is only large cities and commercial sea-ports, with the notable exceptions of Kioto and Kanazawa, that show any remarkable advance in population. Tokyo increased from 799,237 to 1,121,883; Osaka from 287,984 to 361,694. Kobe, one of the new commercial ports, leaped from 13,295 to 80,446. While Kioto, the ancient metropolis of the Mikado, declined from 331,308 to the humiliating number of 245,676 in the course of seven years. But changes still more significant present themselves, if we consider cities and towns below 50,000 inhabitants. All of them, if we except a few cities exceptionally favoured by situation, show a decided falling off in population. Out of 34 cities which have between 20,000 and 40,000 inhabitants, 17 show a positive decrease, amounting in some extreme cases to ¹20,000. It thus appears that at present there is a decided tendency for population to move from the cities into the country; a tendency just the reverse of what is observed in England and in the United States. This is a most significant fact, and must be regarded as indicating an essential stage in the transition of the Japanese people from Feudalism to national economy. It may be expected that this adjustment will be accelerated by the introduction of machinery.

Let us observe one point further which is important in showing the present industrial status of the country. In December, 1886, the total number of people living in cities of over 20,000 inhabitants was 3,524,983. This, compared with the entire population, which is over 38,000,000, constitutes but eleven per cent. of the whole. When we remember that over

¹Hagi in the province of Nagato.

twenty-five per cent. of the American and over sixty per cent. of the English people are found in cities, this eleven per cent. may be taken as indicating a low stage of industrial development. It shows that the people are scattered in small towns or in the country, that little exchange is carried on, that small farms are prevalent, and that manufactures are not yet concentrated in large establishments.

The class distinction of the old feudal days is pretty nearly effaced. Except a small class of nobles, there is no set of the people who carry with them any political privilege. The class of feudal retainers is still recognized before the law, and in 1886 they numbered 424,326 households. But the law does not entitle them to any special honors or immunities, and, save for the culture and refinement in a part of their order, they play no important role in society.

It is important for our purpose to know how the people are classified according to occupations. This may be learned from the census of 1876, which gives the following classification of the country's producers.¹

Farmers.....	14,870,426
Artizans.....	791,416
Merchants.....	1,209,191
Miscellaneous Occupations.....	2,129,522
	<hr/> 19,010,555

In the same year, the total population was given as 33,300,675, of whom 9,056,309 were children under fourteen years of age; thus the productive classes constitute over seventy per cent. of the whole adult population. Compared with the returns of the tenth

¹As quoted in *Comptoirs Japonais*, Vol. I, No. 2.

census of the United States, this speaks very favorably for Japanese industry. The only point worthy of special notice is the small number of so-called artizans and the relatively large number in the last two classes. This, however, is explained when we consider that the scattered condition of the people requires a large number of petty shops in the villages and towns; that the poor means for inland transportation demand the personal service of a large number of laborers in the conveying trade; and that high taxes upon real estate draw many to those kinds of business, upon which comparatively less onerous taxes are imposed.

The agricultural population, as reported in 1884, was 15,616,211, and a similar increase in other classes might be expected. But what we are chiefly concerned with here is the proportion in which these various industrial classes exist, which we may trust is fairly represented by the foregoing figures. How the relative magnitude of these classes will be likely to change by the introduction of machinery we will see later.

Under the *régime* of Feudalism, as also before it was established, there was no regular system of census. There are, however, seven or eight fragmental reports bearing various dates, that are generally accepted as trustworthy. In the last of these, that of 1815, the population was counted by collecting the registers of different feudal provinces, from which it appeared that the Japanese nation numbered 25,621,957. A regular census was first taken in 1872, and since then one has been taken every year, except in 1878 and 1879. The latest results show that the total population is 39,063,007, the average size of a family

4.93, and the birth-rate 2.57 per cent., giving an annual increase of about 360,000 persons in the last four years.

2.—Agriculture.

In Japan, as in Europe, land was once the property of a feudal lord who held it by a sort of legal fiction, and whose main source of revenue was the tax paid by the occupiers of the soil. And, as we have already observed, the rates of taxation and the modes of its administration were in no two provinces identical. When the new government was fully established, one of the first questions that demanded its attention was how to create private property in land and establish a uniform system of taxation. Many schemes were suggested and carefully examined, the one finally adopted following, in all important particulars, the plans offered by Mr. Munemitsu Mutsu, now minister to the United States.

The "Land-tax Reform Acts" were enacted July, 1873, and the work was accomplished in 1880 after meeting much popular prejudice and opposition. The characteristics of these reforms were mainly as follows :

(1.) The government granted to the people full liberty to buy and to sell their land, except to aliens, giving legal proprietorship to farmers who occupied the land, or to those owners who could give evidence of their prior possession.

(2.) The tax in kind was commuted to a money payment, assessed on the basis of the "legal value" of the land. For the national tax, the rate of payment was three per cent. of such valuation, while the maximum limit of the local tax was placed at one-third of the national tax.

(3.) The "legal value" of land was determined by taking the average of the actual yield of each piece of land during five years, and estimating it at the average price of grain prevalent in a given locality during the same period. The sum thus obtained was capitalized and accepted as the basis of taxation. It was further enacted that a re-valuation should take place every six years, but this provision has never been carried out.

These reforms mark an important stage in the progress of Japanese agriculture. It was then for the first time that farmers ploughed their own fields, freed from all feudal restraints; and although the rate of payment was still high, the farmers were secured by the law against irregular and arbitrary taxation. In this way there was inaugurated the system of small proprietorship, the beneficial results of which, both to farmers and to the country at large, can not be over-estimated. At the same time, it is important to recognize that the rates of taxes, the distribution of land, the system of land-tenure, as they are left by these reforms, are only temporary arrangements. They constitute but a single step in the transition from Feudalism to modern conditions. It is essential that still further changes be introduced, if the system of agriculture is to be permanently improved. But of these changes it is my purpose to speak in the latter part of this paper.

Land in Japan is divided into public and private properties. The reports of the Department of the Interior for 1888 give the following figures as representing their relative extents:

Public land.....	46,669,835 acres.
Private land.....	32,914,845 "

Public land includes crown lands, parks and grounds for public buildings, and most of the waste lands that are not brought under cultivation. Private land comprises many different kinds of lands whose relative extents and current prices may be learned from the following table :

Table showing acreage and price per acre of various lands specified.¹

	Acres.	Average price per acre.	
		Yen.	Sen.
Rice-fields.....	8,714,165	....	180 00
Other tilled lands.....	4,812,145	....	55 20
Forest and waste land.....	20,442,270	....	1 20
Building ground (village)..	837,925	....	125 60
Building-ground (city).....	49,052½	....	654 80
Salt-yards.....	18,907½	....	71 20
Hot Springs.....	5	....	10,660 00
Miscellaneous.....	1,157,750	....	31 20

These figures will show that, in spite of the common impression that every foot of land in Japan is utilized, a comparatively small portion is as yet brought under cultivation.

Owing to the diversity of climate and to the varying density of population, Japanese agriculture is not uniform throughout the country. In general, the distribution of cultivated land follows the distribution of the people. In the thickly settled portion of the South, and on the eastern coast, it is not seldom that we find one-third of the whole area under cultivation, while in the North, and along the northwestern coast there are only between fifty and eighty acres of cultivated land to a square mile, and in the Island of Yezo the soil remains in its primitive and wild

¹This table is based upon the Annual Report of the Department of the Interior, 1888.

condition. But here again the influence of Feudalism is very remarkable. Neighboring provinces present a striking contrast, not alone in the actual amount of land under cultivation, but also in the relative amount held per capita by the agricultural population. For the sake of illustration, let us examine the proportion in which all kinds of tilled lands stand to the agricultural population in the nine provinces of the Island of Kiushiu—

Names of Provinces.	Acres of cultivated lands per capita of agricultural population.
Chikuzen	0.87
Chikugo	0.62
Buzen	0.52
Bungo	0.42
Hizen	0.60
Higo	0.42
Hiuga	1.12
Osumi	2.15
Satsuma	0.60

Thus we see that though the per capita size of farms is only a fractional part of an acre, the inequality of distribution is nevertheless great. Nor does it follow that the average farm is small where there is a dense population, or large where population is sparse. In the province of Kaga, one of the most densely settled regions, the per capita holding is over one acre and a half, while in sparsely settled provinces, like Kotsuké and Shimotsuké, it is not more than one half an acre. It thus appears that in studying Japanese agriculture, we must bear in mind that Feudalism, although abolished in form, still exerts an important influence, on the present methods of agriculture. There still exists some difference in the modes of cultivation, in the size of farms, and in the system of land-tenure, between one province and

another. Fortunately, however, this diversity of condition is fast passing away.

The same crops are raised all through the country. By far the most important staple product is rice; next come barley, wheat, and beans. According to the agricultural statistics of 1886, the actual production of these various grains is as follows :

	Bushels.
Rice (<i>Swamp and Mountain</i>).....	185,957,120
Barley.....	37,893,760
Wheat.....	16,069,860
Naked Barley.....	23,406,180
Beans.....	12,117,150

Two crops a year are quite common, indeed, almost universal in the Island of Kiushiu, Shikoku, and through the eastern and western part of Hondo. Wherever this is the case, rice is planted between May and June and after its harvest in the fall, the land is permitted to rest until the beginning of the winter, when either wheat, barley, or mustard is sown, and before the spring months are gone, these crops are ready for harvest. In a few exceptional cases, certain vegetables are planted between these two seasons and a third crop is realized. No attempt has as yet been made by the Statistical Bureau, to show the extent of these two-crop lands, but carefully comparing the area under cultivation and the annual amount of total production, it will be safe to assume that over one-third of tilled lands belong to this favored class.

The productive power of land is very different in different localities. In some provinces, the average yield of an acre reaches as high as forty-one bushels of rice, while in others it ranges from thirty-four bushels down to eighteen bushels an acre. In the

case of wheat and barley, not only does there exist a marked difference in production, but the average return itself is very meagre. It is believed that the productive power of land has been decreasing since the tenth century, and that, while "the entire area devoted to crops has doubled during that time, the crop itself has increased only about one-half."¹

It may be stated as a principle of universal application that no large and extensive agriculture is possible under the ascendancy of feudalism, and Japan forms no exception to the principle. Her agriculture is an extreme type of the small farming. There are many fields cultivated by independent farmers which are not more than two acres and a half, and those which exceed ten acres are considered to be exceptionally large. Moreover, these farms do not form one continuous piece, but are divided by a network of earthen balks, or by ditches dug for the purpose of irrigation. Thus the land cultivated by a farmer lies scattered here and there in small pieces, which are frequently not more than half an acre in size. But we must not infer from these remarks that there are no large land-owners in Japan. Occasionally we meet favored persons who possess over two or three hundred acres, and men who own forty or fifty acres are quite common among the well-to-do people. But these owners let their lands to tenants by small parcels, so to speak, and from each of them they collect rent either in kind or in money.

A farmer who owns five acres may be regarded as a typical Japanese farmer, and it is worth our while to notice his condition a little in detail. He

¹ W. E. Griffis, *The Mikado's Empire*.

lives in a comfortable house of three or four small rooms, with a commodious barn adjoining. He has one hired man through the year and perhaps one horse in his stable. His farming is of the most thorough order. In the sunny days of May, he begins to turn over the ground with his one-horse plough which, small as it is, cuts the soil eight or nine inches deep, and then the whole field is carefully pulverized and raked over until not a lump is left. When the soil is thus prepared, water is let in and the field is flooded seven or eight inches deep. Then tiny stems of rice are transplanted from their seed-bed in rows about five inches apart. This is mostly done by women. During the whole season, weeds are carefully removed and liquid manures, lime, and compost of straw, are used three or four times. The growth of rice is luxuriant and presents a beautiful appearance. When it matures, the field is left to dry and the crop is ready to harvest some time between the middle of September and the last part of October. By this method of gardening, some of the industrious and intelligent farmers often reap an enormous amount of products. The yield of fifty or sixty bushels to an acre is not unknown in some parts of the country.

The variety of rice whose growth is above described is called "low-land" rice, (swamp rice,) and the cultivation is considered to be the best and most productive. All the alluvial lands of the sea-shores, river valleys, and creek bottoms are devoted to this form of agriculture. There is another sort, however, which is called "the upland variety" (mountain rice). It is grown on high, dry ground, requiring but a small amount of labor and no expensive system of

irrigation. But the yield of this kind is comparatively small, amounting to scarcely more than fifteen bushels per acre. More or less of the soil upon which this is planted is found in all the provinces, but the total acreage is not more than two per cent. of the whole extent of rice fields.¹

The Japanese farmer enjoys a short rest in the fall. But soon the ground is again ploughed and pulverized, and divided off into small plats, each of which is then furrowed into rows. In these furrows either wheat, barley, or mustard is sown, some time between November and December. The same care is taken of the winter crop as of the summer. Closet and fish manures, ashes, grass, sea-weeds, and the like, are used for fertilizing purposes, and plants grow and mature in the genial air of the spring. But in this the farmer is hardly so successful as in the summer crop. In the cultivation of hardier grains than rice the Japanese farmer needs much instruction. One of the difficulties in the way of cultivation is thus pointed out by Consul Stahel, whom I quote here at length.

"In the first place," says he, "the fields are laid down in ridges of a little more than one foot in width, on which are sown two rows of wheat so thickly that the plants have not room to develop themselves. This causes very uneven growth, the outer plants coming to maturity long before those which have a bare struggle for life in the middle of the rows. The result is that the crop ripens irregularly, the ears on the inner plants being quite green, while those on the plants more favorably situated are ready for the sickle. As this system has been going on for generations, it is not to be wondered at that the quality of grain has very much deteriorated, and the Japanese wheat instead of being, as it ought to be, equal to any in the world, is about the worst."²

¹ *U. S. Consular Reports*, Vol. 5, No. 16.

² *U. S. Consular Report*. Vol. I, No. 1. Rein and Maron hold the same view. See Rein, *The Industries of Japan*, page 50.

In addition to such defect, the want of good and cheap manures and the limited consumption of these cereals at home may be mentioned. The result of all these is that in exceptionally good cases the wheat crop hardly ever exceeds twenty-two bushels per acre, while there are many fields which do not yield over seven or eight bushels, the average in 1886 standing at twelve bushels.

The harvest of this winter crop brings us back to the rice-planting. Let us stop here to examine what are the net earnings of our five-acre farmer after his year's labor. Supposing his crops no better than the average, say thirty-five bushels of rice and twelve bushels of wheat per acre, his total products would be worth some one hundred and ninety-four yens, estimated at the current prices. Add to this ten yens, which will be the capitalized sum of all the advantages, such as fuel and small green crops, incidental to farming, and his gross income will be two hundred and four yens. From this sum taxes, wages of workmen, and the cost of manures are to be deducted. Assuming "the legal value" of his land at two hundred yens, which is a moderate estimate, being at present considerably above the market price, his taxes, both national and local, will amount to over thirty yens per year.¹ The wages of farm-labor, as we have observed, varies in different provinces and in different seasons. On an average, 18.6 sens are paid to the best men and 12.1 sens to the best women. In the middle and southern por-

¹In 1876, by an Imperial ordinance, the rate of land-taxes was reduced from three per cent. to two and a-half per cent. for the national tax, and the maximum limit of local taxes was brought down to one-fifth of the national tax, instead of one-third.

tions of the country the highest average prices paid for a day's labor are twenty-five sens for a man and eighteen sens for a woman. The compensation for a workman hired for a year is about thirty yens, the actual wages ranging from thirteen yens seventy sens up to seventy-four yens. In all cases, however, board is included, and usually lodging, and compared with other classes the real wages of the farm-laborer is decidedly high. In the present condition of the art of agriculture, our typical farmer has to keep one hired man all through the year, and in the harvest seasons he has to hire at least two or three extra laborers. The sum then that goes to pay wages will, perhaps, at a moderate estimate, amount to forty yens a year. Now in regard to the third item, namely manures, it is difficult to give any general statement. Their variety and cost, as well as the amount employed, are so different in different localities. Owing to the high cost of transportation, "portable manures" are used to a very limited extent, and in the interior farmers depend altogether upon the fertilizers from closets and stables, ashes, grass, and compost of straw. Thus it is safe to assume that no large outlay is made for this important requisite, and it seldom exceeds over four or five yens per acre. Summing up these different items, a year's account of our five-acre farmer will stand as follows :

Summary of account of a five-acre farm in Japan.

Production per acre.		Current price per bushel.	Total pro- duct of five acres in money.	The cost of pro- duction.
		Yen. Sen.	Yen. Sen.	
Rice.....	35 bushels.	80	140 00	
Wheat.....	12 bushels.	90	54 00	
Incidental advantage.....			10 00	
			204 00	
Taxes.....				Yen. Sen. 30 00
Wages.....				40 00
Manures.....				20 00
				90 00
		Net gain..	114 00	

This apparently small sum of net earning is enough to support the farmer in his frugal, yet peaceful and contented life. He sends his boys to school. His wife and daughters spin with their hand-wheel, or weave cloth from imported yarns spun, perhaps, in Bengal or in Manchester factories.

A farmer of the above description is regarded by his order as a man of fortune. There are many whose farms are much smaller and who cultivate as mere tenants, or who supplement their earnings by engaging in other business during a large part of the year. In 1884, this last class numbered above three million, almost one-fourth of the whole agricultural population. The lease systems under which some of the tenants hold their lands are by no means moderate. Nor are they identical in all provinces. In some, the average rate of rent per acre for rice fields is about twenty-four bushels of rice a year, but in this case, all the burdens of land-taxes are born by the land-owner. In the dryer lands, money rent is usually paid, varying in amounts for the dif-

ferent crops raised. It is stated by an authority that in some provinces "four-fifths of the crop go to the owner of the land; and from the one-fifth remaining, all the cost of fertilizing and harvesting must be obtained."¹ Such excessive payments are the occasion of much hardship. The cause of the evil lies in the fact that rent is still regulated by feudal customs, and the necessity of some kind of legal interference for such cases is quite evident.

Beside grains, the most important agricultural products are mulberry, tea, cotton, and sugar. From the point of view of national economy, the first two products stand in the foremost rank. It is due to the cultivation of these plants that foreign commerce in Japan has assumed its present magnitude and it is from them that its future expansion is to be expected.² In 1887, the exportation of silk amounted to 21,920,902 yens, and that of tea 7,603,341 yens, the two items constituting over 58 per cent. of the total export trade of that year.

Mulberry trees are planted more or less in all provinces with a few exceptions. But the most favorable latitude lies between the 35th and 40th north parallels, and for this purpose, the table land of the middle and northern portions of the main island has been subdued and tilled during the last two decades. The trees are planted there in dry and light soil. They are in rows from ten to twelve feet apart and

¹The rent of the estates owned by the immediate retainers of the Shogun has been especially enormous.

²A sudden impulse given to silk industry in Japan, when the country was first opened, was due to the high prices paid at the time for raw silk and silk-worm eggs, in consequence of the silk-worm disease raging in Europe between 1856 and 1870. See J. J. Rein, *The Industries of Japan*, p. 188, and also pp. 200-203.

about the same distance from each other. Until the third year, the young trees give but a small yield of leaves, and, gradually increasing, they are fully matured, if on good soil, at the eighth or ninth year. The crop from leaves alone is variously estimated from 100 yens to 150 yens per acre, but, both summer and winter, some green crops are always raised between the rows of the trees and additional products are thus realized. Farmers who plant these trees, generally raise silk-worms in their own houses and sell cocoons or even reel them into fine yarns. Thus farmers in those silk regions are somewhat different in character from rice cultivators, and it is in those portions of the country that we occasionally find large farms and something like organization of manual labor. In the silk-worm season, from May to July, there are many families in which forty or fifty men, women, and girls are employed, who pick the mulberry leaves from the branches, cut them, and feed the worms, and when the cocoons are ready, boil them, and spin them into threads. All this is done by unskilled laborers, and the tools used are of a simple and crude order. When we come to consider manufacturers, I shall have occasion to mention many large establishments where modern machines are used. But generally speaking, silk raising under present conditions, must be regarded as a by-industry of farmers.

The cultivation of tea, it is needless to say, is a profitable and lucrative industry. By the wholesome stimulus of foreign market, its total production has grown from 23,012,682 pounds in 1878 to 57,352,641 pounds in 1886, having more than doubled in the course of eight years. The soils that are most sought

after for its cultivation are on the sheltered hillsides, although it flourishes on the plains along the sea-shore. There the shrubs, four or five feet high, are grown in rows, carefully pruned and trimmed, and the soil between them is thoroughly fertilized with oil-cakes or fish-guano. The plants require constant care in all seasons. The tender leaves, which are sent forth toward the end of spring, are picked by women and girls. They are then taken into houses, steamed, and rolled between mats, and finally fired in ovens. The processes are simple or complicated, according to the kinds of tea prepared, and they all require the careful work of skilled hands. About 2,500 pounds of tea leaves to an acre is considered a fair return, and occasionally over 3,000 pounds are produced.¹ The net earnings of tea planters are therefore much greater than those of ordinary farmers. They live in comfortable homes and keep laborers and pack-horses to do most of the work. Tea is cultivated to some extent in almost all of the provinces. Its chief centre lies in the island of Hondo, between 34° and 36° north latitude. Suruga, Mino, Ise, and other provinces along the eastern coast stand in advance of all the others in the area devoted to tea culture.²

Cotton and sugar are other agricultural products worthy of attention. But the limit of our space admits of no more than a passing notice. Cotton is

¹In general four pounds of fresh tea leaves yield one pound of the finished article.

²There are still large areas where both the soil and climate are well adapted to the growth of tea, and, as we shall see later, it is in this direction that the Japanese agriculture is to be extended in the immediate future.

raised mostly in the middle and western parts of the main island. The cotton ball is usually small and about 360 pounds of ginned cotton are obtained from an acre. The total amount raised in 1884 was 134,556,108 pounds, but this does not meet more than one-third of the whole domestic consumption.

Sugar is made from the sorghum plant, which grows luxuriantly in all the southern portions of the empire south of 35°. Dry upland soils are required for the successful growth of the cane, and the expenditure of labor and fertilizers equals, if it does not exceed, that employed in raising any other crop. The total production in 1886 amounted to 111,515,866 pounds against 148,943,716 pounds imported in the same year.

Thus we have surveyed the principal features of Japanese agriculture. It is almost unnecessary to observe that in many important respects it is yet in a primitive condition. Although by patient and hard work a comparatively large crop is obtained (at least of rice), scarcely any scientific knowledge is possessed by farmers. Grass-culture is entirely neglected, stock-raising is almost an unknown art, and fertilizing materials are scarce, expensive, and, therefore, little used. There is almost no specialization of agriculture, and no division of labor. The implements are simple, and manual labor is used in the most wasteful manner.

Hitherto on the part of the government many energetic efforts have been made for agricultural improvement. Model farms and experimental gardens have been started in nearly all districts, and foreign seeds have been tried and acclimated; agricultural exhibitions, both national and local, have been held,

and prizes awarded. In different places agricultural schools and colleges have been established, and many experienced foreigners have been engaged both as theoretical and practical farmers. Foreign seeds, models, cuttings, and the like have been distributed *gratis*. Important works on farming and stock-raising have been written or translated into the Japanese language. For the development of the island of Yezo a distinct department has been established, and in connection with this many American engineers and scientists have been hired and its resources have been carefully examined.¹ In Tokyo a model farm of about two hundred and fifteen acres was established. And on one occasion, under the superintendence of General Capron, many fruit-trees from American grafts were planted, excellent breeds of horses, sheep, cattle, and pigs were thriving and multiplying. The interest shown by some of the enterprising citizens is not less intense. Periodicals devoted to agriculture and commerce now number over one hundred.

But in spite of all these efforts, little has yet been accomplished. In such a vast undertaking, which affects many millions of the people, these public and private encouragements are hardly sufficient. Thorough and progressive reform in rural economy requires some vital changes in the whole economic body. The reform of the system of taxation, the change in agricultural prices, and the expansion of external and internal commerce are all necessary prerequisites. Why these changes are necessary, and

¹For a critical account of the undertakings of this Department see Rein, *The Industries of Japan*, pp. 18-20.

how they can be introduced under the present circumstances, I shall discuss in the next chapter.

3.—*Manufacture and Transportation.*

Industrially as well as politically, Japan has developed independently of foreign influences. And nowhere is her insular character so strongly marked as in her arts and manufactures. Whether good or bad, both in design and workmanship, Japanese art carries with it the taste and the aspiration of the race. Up to the time of the London Exhibition in 1862, the civilized people of the West were as ignorant of Japanese art as were the artists of the eighteenth century of the Elgin marbles. But since then it has been thoroughly advertised by means of the expositions of Paris, Vienna, and Philadelphia. "The Japanese court" in these exhibitions, in which carefully selected specimens were displayed, attracted the attention of all true lovers of art and a great variety of artistic products have since found their way to the cities of both Europe and America.¹ The eyes of intelligent critics have been caught by them, and however true it may be it certainly incites our insular pride when Sir Rutherford Alcock says in a recent article,² that "the rich treasures of art-work came upon Europe as a new revelation in decorative and industrial art, and have continued since to exercise a strong and abiding influence on all industrial art-work."

¹ As to the remarkable extent in which Japanese models of ceramic and bronze work have been imitated in England and France within the last fifteen years, see the detailed account of Rein, pp. 331-334.

² *Britannica*, "Japan," ninth edition.

Here I shall delineate briefly where and in what manner these artistic works are produced, showing the conditions under which they are made, and the industrial organization of those who make them. This will be no less interesting from the economic point of view than from the point of view of art itself, for there still remain in Japan many phases of industrial organization which belong to the by-gone days of western Europe.

But here let me call your attention briefly to that branch of extractive industry which always stands as the connecting link between manufacture and agriculture, *i. e.*, mining.

Japan was once known to ancient mariners as the land full of precious and useful metals. Marco Polo, the Venetian traveler, in the thirteenth century, relates of "Zipangu" as follows: "They have gold in greatest abundance, its sources being inexhaustible. The king does not allow of its being exported. To this circumstance we are to attribute the extraordinary richness of the sovereign's palace. The entire roof is covered with a plating of gold. . . . The ceilings of the halls are of the same precious metal; many of the apartments have tables of pure gold of considerable thickness, and the windows also have golden ornaments."¹ Evidence of the truth of such a report was furnished by the immense amount of precious metals imported into Europe by the Portuguese and later by the Dutch.

Between 1550 and 1639, the Portuguese merchants brought home from Japan nearly three hundred million dollars worth of bullion, most of which was gold.

¹As quoted by Henry S. Munroe, late of the Tokyo University. *The Engineering and Mining Journal*, Vol. 22.

As the relative value of silver and gold was then six to one in Japan, while in Europe it was nearly twelve to one, the exportation of gold formed one of the most profitable parts of their trade. "Between 1649 and 1671 the Dutch traders sent home over two hundred million dollars in bullion of which, however, nearly two-thirds were silver."¹

But careful geological survey and reconnoissance made in recent years hardly warrant this ancient belief in the unlimited resources of gold and silver. The history of the last three hundred years shows the constant decline in the yield of precious metals. The extraction on a large scale probably dates from the year 1590, when the Japanese first learned from a foreigner to separate silver from copper and lead. From this time until 1671, when an edict of the Shogun put a stop to the exportation of bullion, excessive foreign demands taxed both gold and silver mines to their utmost, and it is estimated that not less than two million dollars of gold and four million of silver have been extracted per year, and at one time the output of gold reached twelve million dollars for a single year. If we compare with this, the estimated yield of only 6,109 $\frac{7}{8}$ ounces of gold and 24,584 $\frac{1}{2}$ ounces of silver in 1875, it is evident that there has been a great falling off in the production of the precious metals. The chief causes of this, as claimed by H. S. Munroe, are the rise of wages and the practical exhaustion, as far as the Japanese methods of mining are concerned, of the more accessible and easily worked deposits."

The northern part of the main island and Yezo are rich in precious metals, although they may be found

¹ Henry S. Munroe, *ibid.* See also *ibid.* p. 326

more or less abundant in thirty provinces out of sixty-four. There are about a dozen gold and silver mines which are profitable. Some of them are under the management of the government, and are worked, under the supervision of competent engineers, with a large outlay of capital. Since 1874, a steady and constant progress has been made in mining, and the report of 1885 places the total production of gold at 9,616 $\frac{1}{4}$ ounces, and of silver at 83,634 $\frac{5}{8}$ ounces, showing an increase of 170 per cent. in gold and of 340 per cent. in silver. Most of the old mines are flooded and abandoned; but if they are reopened by energetic hands, with improved methods and large capital, it is hoped that the annual yield of silver will certainly equal, if not exceed, that of former times. The deposits of gold, however, are not so promising.

The great wealth of Japan lies, contrary to what was once supposed, in the rich deposits of iron, copper, and coal. "Of the metallic minerals," says Munroe, "the ores of iron are the most abundant." They occur especially in the northern and southwestern provinces of Hondo, in the form of magnetite and of magnetic iron sands. Their qualities are said to be excellent, requiring no elaborate processes of extraction. But they are not extensively worked in many localities. In a few cases, mines have been opened with improved methods under the superintendence of foreign engineers, and in 1884, 4,775 tons were obtained from the government's mine of Hiroshima, in the province of Aki. In all, some four hundred iron mines were worked, and the total product for the year named was 11,766 tons.

Copper is found almost everywhere in Japan, and in some cases, silver is associated in the same vein.

Since 1642, when the exportation of silver was practically abandoned, copper formed one of the most important commodities for the Dutch trade, and of late the extended foreign demand for this metal has stimulated industry, and is vastly increasing in production. Copper mines number over five hundred, the four principal ones yielding over one-half of the total product. In these mines, many modern improvements have lately been adopted. In 1885, the yield was 10,457 tons.

The supply of coal is much more extended than that of either iron or copper. Although at present its real extent is imperfectly estimated, it is known that coal can be found in almost every part of the country. These deposits are of all varieties,—peat, lignite, bituminous, anthracite, and graphite. In the Island of Yezo, four principal fields are surveyed, the largest of which, viz., the Ishikari field, extends over an area of 2,400 square miles, with workable seams ten feet thick. In the main island, eighteen fields are already being worked, and in the Island of Shikoku, there is at least one large field, the one in the province of Awa. The north-western part of Kiushiu, the Pennsylvania of Japan, is almost entirely covered with coal fields. According to the estimate of Henry S. Munroe, in 1876, the total coal-bearing area in Japan is about 5,000 square miles, while the average thickness of the veins is fifteen feet. On account of the proximity to an excellent market, the port of Nagasaki, by far the largest amount is at present dug from the Kiushiu mines. In 1884, the total output of the country reached 870,382 tons, of which some 807,000 tons were from Kiushiu. The production of coal is growing very rapidly, and it is

now being exported to China, India and Russia. In July, 1888, the export duty on coal was removed and its production will doubtless be stimulated thereby.

Most of these profitable mines are owned by private parties and corporations. The recent policy of the government being to place profitable mines as far as possible under private control, there is offered in this field great inducement for the investment of capital. For the full development of these baser mines, however, not only is more mechanical skill and more business energy needed, but there must also spring up such industrial conditions as necessitate the development of the mining industry. Better means of transportation must be opened, and more manufactures be established, before iron and copper ores will be extensively smelted, or the coal fields be worked on an immense scale. Yet it is highly promising for the country to possess such immense quantities of raw material, without which it is futile to expect solid progress of national industries. It has been estimated that the coal product of Great Britain is equivalent to the labor of one hundred and thirty-three millions of operatives working without wages for her enrichment. Japan, says H. S. Munroe, has, in the Ishikari coal field alone, stored up, and available for at least two centuries' use, the labor of an equal body of men.

Japanese art, unlike the Grecian, never displayed a high degree of perfection in architecture. Her industrial work chiefly centres in the production of small articles. Artizans, animated by the love of nature, find their pleasure in decorating their works by faithfully imitating her beauties. The most prominent among her artistic works are silk, lacquer, ceramic, and bronze industries. One who has studied

the recent work of J. J. Rein, on "The Industries of Japan," will not fail to see what an important part is played by the dexterity and technical knowledge of artisans. Their appliances are simple and primitive. Yet with patience and with pleasure in the work, and with technical skill acquired by long apprenticeship, some of the artisans in Japan produce works which are worthy of universal admiration.

Most of these industries were developed during the time when artisans enjoyed the patronage of feudal barons, and when they vied with each other in supplying the never-ceasing demands of the privileged classes. The manufacture of porcelain and pottery has acquired its importance since the Korean expedition in 1598, when many generals brought home Korean artists to establish manufactures in their own provinces. The lacquer industry seems to have attained its greatest artistic perfection at the end of the seventeenth century, when the Shogunate government was at the height of its splendor. When the old order of things was broken up in Japan, some of these industries received a sudden check, and by the revolution in the manners of society, certain processes of Japanese art will be lost forever. Yet in some other branches, such as ceramic, metal, and silk industries, the Japanese artist has been profited by the stimulus of a broad foreign market, and has received instruction from the International Exhibitions held in both Europe and America.

Common branches of industry are widely distributed throughout the country. Of the work in the fine arts, however, the production is limited to certain localities. Kyoto leads all other cities in silk and metal industries. Tokyo stands most prominent in

lacquer and cabinet manufactures. Industries such as porcelain and paper, are located in various districts, where raw materials are accessible, and production is favored with climatic and water facilities. In all such manufacturing districts, producers are usually found in groups. In Kioto, a group of pottery and porcelain manufacturers is situated in the eastern part of the city, while in the western part, known as Nishi-Jin, are located the weaving and dyeing establishments, with no less than eighteen hundred silk weavers and six thousand looms. In Seto and Arita, two of the most famous centres of porcelain, potters cluster round the deposit of clay and make a village by themselves. In the latter, there are about a dozen large furnaces and twelve hundred families employed in the flourishing industry.

With a few exceptions which will be mentioned hereafter, Japanese manufacture is carried on in the house of a master workman. Establishments are usually small, having at most not more than twenty or thirty employés, some of them being hired by the day and others being taken as apprentices during a certain number of years. Since in all branches of industry appliances are very meagre, it requires a long term of apprenticeship to develop necessary skill. In gold-lacquer painting, for instance, a young artizan needs from eight to nine years of training, aided by unmistakable natural talent, before he can succeed in working as a master in his department. Even in the common trade of a carpenter, in some of the southern provinces it requires from five to seven years of apprenticeship. But as no law exists touching the subject of industrial organization, as was once the case in Europe, while Europe was

passing through the period of handicraft industry, industrial matters are wholly regulated by customs, which in many cases are peculiar to each house and to each community. In such a state of affairs, it is not at all strange that art products reflect the individual characteristics of the artists. What are known as trade-secrets are jealously guarded and are passed down from father to son. It is said that crackled wares of Satsuma, so often admired abroad, are produced by one family only, and that the bronze-works of Kioto are monopolized in the hands of few artizans. Such a fact is not at all strange, if we consider that so long as art products are made by hand, and the demand for them confined to a few privileged classes, the technical skill required for their production will come to be regarded by the artizans as sort of private property. Under such circumstances there is no motive for industrial expansion.

A notable exception to this mode of production is found in the brewing of Saké. This beverage in Japan is fermented chiefly from rice and wheat, and its production has been conducted on an immense scale. In large store-houses, with high roofs and thick plaster walls, two or three hundred men are often employed. Here are clerks, foremen, and laborers, the master simply furnishing the capital and providing superintendence. Thus in the business of brewing, Japan has for centuries had an industry typical of the modern industrial organization of the western world. Here are found the two classes, laborers and capitalists. A brewer, even in a small castle-town, during the time of Feudalism, was seen dressed in a shining suit and housed in a fine mansion. He often made large contributions to

public expenditure, and thus bought the privilege of wearing a sword, which was then considered a great social distinction.

Other handicrafts, as has been said, belong strictly to the class of domestic industries. In many important respects the organization of an industry showed a striking resemblance to that of the middle age in western Europe. In many trades, they had guilds with their regulations, by which they aimed to secure the good quality of their work. This was true of the artisans of large cities, especially of weavers, dyers, and manufacturers of tea. In the three principal cities,—Tokyo, Kyoto, and Osaka,—the preparation of raw lack for lacquerers has been made “by a particular guild of lacquer dealers, which ten years ago numbered sixteen members.”¹ One who has traveled in Japan to any extent cannot have failed to observe the existence of many traveling guilds, by which inn-keepers of leading routes are united in distinct groups. These trade-guilds and associations are still existing, and in some trades they are gradually changing their character, adjusting themselves to the changes of industrial environments. The silk manufacturers recently adopted certain general regulations by which they attempted to insure the good quality of products, and for the general observance of their rules they invoked the intervention of the

¹ Rein, p. 350.

Again in Kioto the silk weavers form free corporations, according to their special employments, for the improvement of their common concerns. There are, for example, a picture-weaving guild, a silk-brocade guild, a crape-guild, a velvet-weavers guild, a guild for the manufacture of summer goods, and several others.

State. In some organizations, such as tea and salt associations, it is pertinent to observe that there is an attempt to regulate the total amount of production in the country, thus assuming the monstrous form of modern "trusts." A thorough study of the origin and growth of these trade-guilds will afford a very interesting field for the student of economic history, but I cannot now pursue this line of thought.

It lies outside of my purpose to describe further in detail the various branches of Japanese manufactures. But owing to the importance of the subjects, let me call your attention to the silk and to the porcelain industries.

We have already considered silk as a by-industry of agriculture, but the extension of foreign demand for fine and uniform silk yarns, called into existence many reeling-factories—*filanda*. In the province of Kai the factories number some one hundred and ninety, and in Mino and Hida there are over two hundred and fifty. These factories are usually small, owned by private individuals, and, as most of them are in mountain regions, they are run largely by water-power. Capital invested in such a factory ranges from seventy-five thousand yens in the maximum to one hundred yens in the minimum, the average being about fifteen hundred yens. Our present interest in the multitude of these small establishments arises from the fact that they form the first departure from pure household manufacture, developing on the one hand a distinct class of modern undertakers, and on the other hand a class of mere laborers. For the first time, women and children are employed in factories side by side with men, and the price of their labor is calcu-

lated according to the number of hours worked. In these factories, by far the largest portion of laborers are women and girls, adult men forming only five per cent. of the whole. The number of working hours varies from nine to fourteen hours a day, twelve hours being the most common. From the nature of the work, most of these factories are suspended a part of each year, the small ones being opened only sixty or one hundred days. These circumstances are decidedly disadvantageous to the laborers, and both for their benefit and for that of the country at large, it is highly desirable that these infant factories shall be superseded by factories of more complete organization. In 1885 the total amount of raw silk produced in these factories reached 1,185,212 yens. Most of this was exported to foreign markets. That this new factory system as yet manufactures but a small part of the silk, is shown by the fact that, in 1885, of an export of raw silk amounting to 14,460,780 yens, only a portion was produced by the factories.

Silk is mainly manufactured in the form of satin, striped cloth, crape, and sashes, both for men and for women, the latter being the most expensive part of the Japanese costume. Kioto takes now, as for many centuries past, the first place in the Japanese silk industry. Kiriu and many other towns in the province of Kotsuké, which are mainly distinguished for the manufacture of satin and mixed goods, are next in importance. There are many cities in the northern and central provinces of Hondo, such as Sendai in Rikusen, Akita in Ugo, Kofu in Kai, that are renowned for their silk manufactures; and, in 1885, the aggregate production was estimated

at 3,742,935 yens in pure goods, and 1,491,437 yens in mixed goods. Like many other industries, the silk manufacture suffered a sudden depression when the country was thrown open to the world's commerce.

"While the silk culture of Japan received a great impulse at the opening of the new commerce, . . . silk manufacture has been much and variously damaged thereby. The cheap cotton and wool stuffs thrown upon the market from foreign countries for several decades, compete constantly more strongly with silk materials. Most of the velvet looms were obliged fifteen years ago to suspend competition with the extraordinarily cheap cotton velvets of Manchester. And it has come about that the export of raw silk, beginning in 1859 and rapidly increasing in succeeding years, to which that of silk-worm eggs was soon added, has had a great influence on the price of raw silk, which has risen within a few years to ten or sixteen fold. Many of the Japanese, under such circumstances, found themselves obliged to give up their custom of wearing silk clothing, and to use the much cheaper woollen and cotton material."¹

Notice from the above statement that mixed goods are a trifle over one-third of pure goods, which means that the clothing of medium quality which has been hitherto manufactured at home, is largely supplanted by imported fabrics. Considering the peculiarities of the customs and tastes of the people, and also the immense amount of cheap and skilled labor, which they have at their disposal, it is possible for Japanese manufacturers, not only to regain the home market, but also to enter into successful competition in European silk markets. But this is impossible unless hand-looms are replaced with power-looms and the system of domestic manufacture is changed into the factory system. The power-loom having revolutionized the silk industry of Europe, there can be no market of any consequence for Japanese silk. Gradually, but surely,

¹ Rein, page 381.

old methods of production in Japan are giving way to new methods, by which is manufactured a smooth fabric according to the requirements of the European market. Thus here, as elsewhere, we see the working of external influences upon the old industrial organization of Japan.

Pottery and porcelain manufacture in Japan is an important, as it is an old, industry. Here, I may cite at length a valuable report of Consul-General Van Buren: "Porcelain clays are found in nearly all portions of the country, and what is of great economic advantage, the different kinds of the purest and best quality, are usually found in close proximity, and in many places near water transportation. I believe in all cases, every variety of clay used in the manufacture of pottery is found in a natural state. There is no necessity to manufacture the quartzose or fusible clay as is done in other parts of the world, which adds much to the cost of the ware. It is still more remarkable to find one clay that contains both the fusible and infusible materials in such proportions as to make a light, beautiful, translucent, and durable porcelain. I am not aware that such clays are found in any other country." Taking the country as a whole, there are over two hundred and eighty deposits of clay, adapted for the various kinds of pottery. and so vast are these deposits that there can be no possible danger of exhaustion. Wares, much admired both at home and abroad, are produced at Hizen, Owari, Kyoto, Kaga, and Satsuma, and are known by the names of these provinces. The foreign demand is rapidly developing the industry, and in many places the old household manufacture is being abandoned, and corporations and factories are gradu-

ally taking its place. In 1886, the export of pottery amounted to over one million yens, which shows an advance of almost one hundred per cent. since 1884. It is stated by one of the best authorities that Japan, with the inexhaustible resources of the best porcelain clay, with cheap and skillful labor, will eventually become the foremost competitor in this important industry in the world's market.

Yet there are many serious impediments under which the industry is laboring, that time alone can remove. In many places moulding machines and baking furnaces used are still of primitive type. "In order to form an idea of the extremely simple and primitive working apparatus," says Rein, "we must throw ourselves back a hundred years or more, into the time when in our own country porcelain was burned in low kilns, and the entire preparation of the material was effected without machines, or with only the help of the simplest possible water-power works."¹ In such a stage of production, wares produced lack exactness and uniformity, and artisans, being accustomed to see only a few patterns, are slow to adjust themselves to the never-ceasing changes of European markets. And if to this we add that the artisans are prejudiced against change, that they are suspicious of foreign influence, and that they guard jealously the "secrets" of this trade, we shall be able to appreciate the obstacles to be overcome. All of these influences combine to check the expansion of the pottery industry. The steps necessary to be taken at present are to unite the small establishments into large factories, to place them under intelligent managers, and to introduce

¹Rein p. 464.

among them the better methods of moulding and baking machinery.

Free communication with other nations, not only tends to change the methods and characters of old industries, but at the same time, it opens up new channels in which labor and capital are employed. Not more than fifteen years ago, a large part of the cotton yarns used in Japan was spun by hand. In the evening hours, the passer-by would hear the sweet, rhythmical hum of the spinning wheel issuing from almost every home of the low and middle classes. But by the introduction of English yarns and the establishment of some spinning factories at home, this time-honored hand-wheel met the same destiny as did in England the spinning-wheel of the time of Queen Anne. Such changes in the modes of life and in the methods of production are almost innumerable. They are increasing month by month and year by year, and he who observes them with his own eyes will learn to appreciate the deep significance there is in the phrase adopted as the title of this essay,—*The Industrial Transition in Japan*.

Let us take here a brief survey of “new industries” which are gradually springing up on the ruin of the old. It has been the policy of the Japanese government for many years to encourage private enterprises. Loans were made at liberal terms and land was granted with or without nominal rent. The government has itself started many establishments and undertaken many industrial experiments. At present it owns four factories,—one in silk-reeling, another in paper manufacture, and two in cotton-spinning. Saying nothing of the wisdom of such measures, it must be granted on all hands that the

number of factories and corporations is rapidly increasing in Japan, and that society is growing in activity as well as in complexity. Gas factories, electric-light plants, water-works, and street cars, as well as other modern improvements are taking a firm start. According to the report of the Department of Agriculture and Commerce, June, 1886, the number of steam engines used for industrial purposes is three hundred and eleven, with an aggregate horsepower of 4,094½. The principal industries in which they are employed may be learned from the following table:

Class of Factory.	No. of Engines.
Silk factories.....	82
Coal-mining.....	47
Rice-hulling.....	44
Ship-building.....	16
Cotton-spinning.....	13
Printing.....	6

Other industries in which steam-power is more or less used, are dying, iron-smelting, sugar-refining, and the manufacture of paper, drugs and the like. The steam-factories in the whole country number at present some two hundred and seventeen. The extent to which water-power is used is much greater. Inclusive of those silk factories of which I have spoken somewhat at length, and which constitute the largest number, there were three hundred and sixty-five factories in 1886 in which water is utilized in the most enlightened manner. Besides, there are about two hundred and fifty factories where various manufactures are carried on without the help of steam or water power. Hence the total number of what we may call "new industries" is represented by eight hundred and thirty-two factories with a capital of some 3,661,000 yens.

Perhaps, the questions will occur to protectionists, how, under practically free trade, Japan is struggling against foreign competition; what are the rates of wages and profit enjoyed by the pioneers of these infant industries? The answer to such questions will be obtained, if we examine carefully those manufactures that come into the sharpest competition with imported goods. The report of the Department of Agriculture and Commerce for 1886 furnishes us a sufficient amount of data, and I have taken pains to carefully examine these reports, so far as cotton-spinning, sugar-refining, and glass-manufacturing are concerned. The results obtained are by no means favorable. In the case of cotton-spinning, all but three factories are either paying no dividends or working at actual loss. In two government factories the loss amounted to over 20,000 yens in 1884. Perhaps the nature of the difficulties will be better understood if we compare side by side the accounts of exceptionally good and exceptionally bad cases.

<i>Osaka Spinning Factory.</i>		<i>Okayama Spinning Factory</i>	
	Expenditure.	Gross Earning.	
	Yen.	Yen.	
Total amount of production (per year)	311,100	50,037	
Salaries.....	5,425	819	
Wages. { Men.....	5,272	1,958	
{ Women.....	4,877	1,481	
Materials.....	223,080	42,713	
Incidental expenses.....	1,920	7,117	
Coal.....	4,631	2,743	
	245,205	56,831	
Net gain.....	65,895		
Net loss.....		6,794	

In one case the capital invested is 84,000 yens, and there is a net profit of over seventy-eight per cent., while in the other case the capital is 65,000 yens and the loss amounts to fourteen per cent. The chief differences of the two lie in the amounts of annual production and of salaries and incidental expenses. It seems to be evident from these discrepancies that the latter is equipped with imperfect machinery and conducted by poor managers.

The profit of glass-factories, though my data were hardly sufficient, is very fair. Further examination of these other undertakings, which are comparatively free from foreign competition, reveals fair rates of profit. In coal-mining, for example, more than fifty per cent. of net profit is often realized. One lamentable fact disclosed by our study, is the low rate of wages prevalent in these new undertakings. In the spinning factories of which I have spoken, only between nine and twelve sens is paid to a man and six sens and a half to a woman, working twelve hours per day. This is much lower than the agricultural wages prevailing in the same locality, which is, in this case, twenty-two sens to a man and fifteen sens to a woman. To the more skilled laborers, of course, higher wages is paid, but if this be compared with the wages of the same grade of labor in the old domestic manufactures, it must be admitted that the new system has not yet greatly benefitted the workmen. The economic bearings of such tendencies will be referred to later on in my discussion.

We have thus far regarded the industrial status of Japan from different points of view. What remains for us now to examine are commerce, banking, and

transportation. These are rightly considered as "subsidiary industries," and their magnitude is necessarily limited by those industrial conditions we have already pointed out. Having surveyed at length the distribution of the people throughout the country, and the characteristics of agriculture and manufactures, it is easy to forecast the probable status of commerce, of banking, and of the facilities for transportation. In a brief sketch like the present one, therefore, a consideration of these businesses need not detain us long. In the time of Feudalism there were but three roads worthy of the name. The most important of these connected Tokyo and Kioto, running along the eastern coast a distance of some three hundred and seven miles. This road is about thirty-six feet wide, smoothed with fine gravel and shaded here and there with double rows of Japanese pines. Another road between Tokyo and Kioto runs through the mountainous part of the interior, and though famous for its grand scenery, was less frequently used owing to its rugged condition. The third road extends from Tokyo to Aomori, a city on the strait that divides the main Island from the Island of Yezo. This is the longest of the three, being estimated at four hundred and forty-four miles. Beside these, a net-work of highways was found in densely settled portions, which, though fairly level, were so narrow that most of them did not admit the passage of large wagons. The navigation of the coast by junks and flat-bottomed boats was slow and uncertain, to say nothing of frequent accidents which occurred. Men past 40 years of age, in Japan, well remember the time when it took between thirty and forty days to

travel from Yedo (now Tokyo) to Kiushiu, a distance of some six hundred miles.

The importance of better means of communication for the development of the country was early realized by the new government. At a general assembly of the local prefects held in 1875, a bill was introduced to classify the different roads throughout the empire, and to determine the several sources from which the sums necessary for their maintenance and repair should be drawn. After several days discussion, the following classification of roads was adopted: State roads, "Ken" (prefecture) roads, and village roads. It was determined that State roads shall be maintained at the national expense, though the regulations and repair of the roads should be entrusted to the prefectures through which they pass; that "Ken" roads are to be kept up by a joint contribution from the government and from the particular prefecture, each paying one-half of the sum needed; and that village roads, being for the convenience of the local districts, are to be maintained at the expense of such districts under the supervision of the corresponding prefecture. Each of these classes was subdivided into three heads, and the width of the State road was determined at from thirty to forty-one feet, the "Ken" road from twenty-four to thirty feet, and the village road was optional, according to the necessity of the case. In accordance with these important provisions, many improvements have already been accomplished in different provinces; old roads are being widened or entirely abandoned, and new roads are being opened. Bridges, not less important than roads, are being reconstructed and newly spanned.

The coast navigation was not neglected. As early as 1870 a regular line of steam vessels was put upon the route between Yokohama and Kobé, and from thence to the port of Nagasaki. A native company was soon organized and received a charter in 1874, in which special concessions were made covering a number of years. This company has established regular connection, not only with all the important ports of the country, but also with Shanghai, Fusan, and other continental cities. And the immense fortunes amassed by its founders show how quickly this important industry has been expanded and what a vast service has been rendered to the country. By the strange concurrence of events, this company was nominally dissolved in 1885, and the business was transferred to a new corporation called "The Japanese Mail Steamers Co., which is now under the general supervision of the government. Between Osaka and the Island of Shikoku and Kiushiu, and along the northern coast of the Inland Sea, many steamboats are operated by small companies. In 1886, the whole tonnage of the country included 117,303 tons of steamers and sailboats, and the number of Japanese junks was over 727,000. To crown these improvements the expansion of telegraph lines, which in 1887 were over 16,000 miles in extent, and above all the establishment and continual development of the postal service deserve special mention. With regard to the latter, Japan is indebted in no small degree to the United States.

The railroad movement in Japan is quite recent. Although the first line was constructed as early as 1872, between Tokyo and Yokohama, and afterward between Kobé and Otsu, the total length of lines

was not more than eighty miles. No great industrial influences could be expected from so short a length of line, and, until within a few years, although the government continued its surveys, the industrial and social importance of railroads was not appreciated by the general public. In 1881 "The Japanese Railroad Co." was chartered with a capital of 20,000,000 yens for the purpose of building a road between Tokyo and Aomori, a distance of five hundred and twenty-nine miles. This was the first instance in which such an enterprise had been undertaken in Japan by a corporation. About the same time the government built a short line of eighty-five miles into the heart of Yezo, and was projecting a line from Kobé and Otsu to Tsuruga, a sea-port on the northern coast, the additional road being about forty miles. But it was really in 1885 that the true importance of railroads was realized by the people, and that a railroad mania began to spread throughout the country. Corporations were formed one after another, and between 1886-87, as we have seen, thirteen new companies were created. Meanwhile the government found it necessary to issue a decree entitled "Private Railroad Regulations," by which private roads could be chartered, and by which, when chartered, they were to be brought under the general supervision of the government.¹ About this time the government, desiring to build a road connecting Tokyo and Kyoto, concluded to construct it along the eastern coast, instead of through the mountainous part of the interior as at first planned. The principal lines now under construction by

¹For the main features of "Private Railroad Regulations," see *The United States Consular Report*, No. 83, pp. 458-461.

private companies are in the northwestern part of Kiushiu, along the northern coast of the Inland Sea, in Shikoku, and in the provinces of Kai and Shinano, together with many lines that may be regarded as feeders to the government roads.²

That these improvements in transportation will finally destroy old feudal boundaries and unify the whole country into one industrial organism, no one will hesitate to conclude. But to reach such a goal, not only must there be further changes along this line, but also there must be introduced other industrial and social changes, some of which are nothing short of mental and ethical innovations. At present, Japan has within herself many localized communities, each apparently independent of the other. Not only the local dialects, the provincialism, and the sectional feeling of the feudal days still remain, but even the internal commerce seems to run in its old accustomed channels. In addition to what I have advanced thus far, in support of such statement, I may perhaps be allowed to strengthen my position by drawing certain inferences from the diversity of local prices.

For inland transportation, the chief reliance is still placed upon pack-horses and upon vehicles drawn by men. And upon the best road the burden of three hundred and thirty pounds costs on the pack-horse ten sens per "ri," (1.9 ri = 1 geographical mile,) while upon bad roads the cost may be quadrupled. This high cost of transportation influences materially the sale of agricultural produce, and within certain

²Since writing the above the news has arrived that the line between Tokyo and Kioto was completed in June, 1889. A jubilee meeting was held to celebrate the first 1,000 miles of railroad in Japan.

territorial limits, which are of course very indefinite, the prices rise and fall independent of surrounding localities. The statistics of 1887 give a very admirable table of price-quotations for the previous year in more than a hundred important trade centres. A careful examination of this table discloses many interesting facts. In the first place, it may be stated with confidence that the range through which local prices fluctuate at any place measures the degrees of the difficulty of transportation. From the nature of the case this is especially true of agricultural prices. Of course, such a general principle will be subject to many secondary influences. But taking everything into consideration, we may satisfy ourselves that this is a rule which admits of general application.

The difficulties of transportation will be more clearly shown if we compare the prices of one locality with those of another. The average price of five bushels of rice varies all the way from 3.76 yens to 7.21 yens, and within the distance of fifty miles the difference of one yen is not uncommon. Variations in the price of barley are still greater, the discrepancy being from 1.55 yens to 5.06 yens. Looking over the statistics with considerable care, I have come to the conclusion that the average prices of necessary articles is more uniform than those of articles of less urgency. The price of tea, for example, in some of the northern provinces is something enormous, the average being about fifty-five yens; while in the middle and southern portions of the country, the price fluctuates between fifteen and twenty-five yens. The same is also true of salt, sugar, and ginned cotton. The probable explanation

of such a fact, (assuming the fact to be sufficiently established,) is, that for articles of absolute necessity there is greater competition among dealers, and therefore more uniformity in prices, while for the articles of less importance, or for comforts, a high price in one locality is passed unnoticed by the dealers in another.

II.

STEPS NECESSARY FOR INDUSTRIAL TRANSITION.

1.—*The Laws of Industrial progress.*

The foregoing study of the industrial status of Japan will confirm our statement that the present industrial organization is still the relic of Feudalism. We have seen that the distribution of the people still depends upon the feudal boundaries; that the dominant motive of the society is yet anti-commercial; and that, contrary to the modern tendency, the movement of the people has been from the city to the country during the last decade. We have observed that agriculture, though much encouraged, is still suffering under the burden of heavy taxes, and on account of the prevalent system of small farming, both of which are characteristics of a feudal society. In manufactures also, we have learned that the old domestic system still prevails, and that, although the modern factory system shows strength and vigor, it is as yet insignificant when compared with society as a whole. At this juncture of transition nothing is more pertinent than to inquire what are the natural steps to unify these localized communities into one industrial organism; what are the measures to awaken the industrial energy of

the people, and to establish among them diversified industries; in short, what are the laws of industrial development applicable to the present condition of Japan?

The nature of the laws of industrial development presents a question that has been much discussed. It is the question to which statesmen like Walpole, Quesnay, Turgot, and Stein endeavored to give a definite solution. In general, we shall not hesitate to identify the present industrial stage of Japan with that of the eighteenth century in England, France, and Germany, and we shall find many fertile suggestions in the economic doctrines of these statesmen. The colonial policy of Walpole, the physiocratic doctrine of Quesnay, and the internal unification of Stein, each presents to us an essential phase of industrial transition. But modern students are certainly in better position to take a comprehensive view of the subject than were these great statesmen in the last century. The wonderful development of industry, and the various economic doctrines which have been set forth since then enable us to appreciate the meaning of so-called industrial movements. And by the aid of such historical criticism, we may hope to solve many special problems pertaining to the present and future of the Japanese industry.

First, let us formulate, if possible, the laws of industrial progress, for it is assumed that such laws exist. Industrial development may be broadly defined as the evolution of human wants. Man has but a limited capacity of appreciating want at any certain stage of his development, and his wants

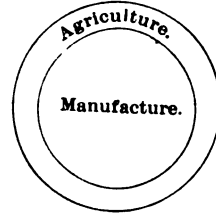
grow in quantity and quality only with the further development of his potential capacity.

But here it is important to recognize that the wants of an individual are necessarily limited by his social environment. Society is divided into a number of industrial groups. The wants of one group are satisfied by exchanging its products with those of all others. The ratio in which this exchange is made is the *quantitative* proportion of what one group produces with that of the others. Certain groups may produce much, while the rest may produce little. In this case the exchange is to the relative disadvantage of the former. The more productive groups must give their surplus for what little they can get from those less productive. On this account the wants of which they are conscious can be but partially satisfied, while certain of their potential desires must remain undeveloped. The less productive groups are not more favorably situated. Their share, when considered collectively, is small, their wants but partially supplied, and the further development of their potential wants fatally hindered.

This properly represents the relation between the two main groups of the national economy, agriculture and manufacture, before the era of invention; and the series of economic revolutions that have taken place since then, may be described tersely as changes in the relations which existed between these two branches of industry. The cheapened methods of production necessarily extended the market for manufactured products. New wants were created where they did not before exist, and this enlargement of wants expanded the productive group. This in turn

revolutionized agriculture. The cheapness of manufactured products meant the enhancement of the price of agricultural products. The extension of manufacture meant the extension of agriculture and an increase in the value of landed-property.

This law of interdependence may be illustrated by the accompanying diagram. Let the larger circle stand for agriculture and the smaller one for manufacture. Theoretically speaking, the expansion of these two circles must be simultaneous, and, assuming the arts of a community to remain the



same, any permanent change in their relation to each other is impossible. But when we examine the course of history we shall find that manufacture always leads in industrial progress. The reason for this is evident. It is mainly manufacturing arts that limit the want of a community, and as soon as any important changes in the methods of their production take place, new wants will be created and old wants be diffused, and agriculture will be stimulated thereby. On the other hand, as long as a country is purely agricultural, it is self-sufficing, and there can be no large demand for its surplus production, and even where the soil is rich and the methods of cultivation are fruitful, there is no powerful motive for the expansion of industry.

Again, it is very essential for our purpose to recognize that the expansion of the wants of a community may be either intensive or extensive. Thus certain classes in society may develop various kinds of wants and create an increasing demand for new forms of manufacture. Such a development is termed

intensive. It exercises a most healthful influence upon both agriculture and manufacture. It is in this way that industrial progress takes place in an advanced community. But in the stage of transition which we are considering, it is certainly the extensive expansion of wants that should be the more carefully fostered, that is to say, the awakening of the nation as a whole, to the consciousness of wants now confined to a few. This will lead to greater production, which will be followed by a decrease of prices, and by reaction will work in the most powerful manner for general industrial progress.

Before the era of invention, as is well known, it was the policy of governments to encourage the planting of colonies and the increase of population. The chief support of such a policy may be found in the fact that in those days of commercial restriction, the necessity of an extensive expansion of the market was keenly felt, and it is undoubtedly true that the artificial means adapted to this end, did tend to the development of national strength. These ideas were not peculiar to the mercantilists. They are found, although disguised, in the statecraft of most early commercial peoples. It was not till after the introduction of machinery that over-population became an object of apprehension, or the intensive development of wants an object of solicitude.

The history of English industry in the eighteenth century will afford us striking evidence of the principles under consideration. It is well known that agrarian improvements in England were begun in many districts early in the century. Large numbers of country gentlemen became interested in the advance of agriculture. Books were written on the

subject ; new methods of cultivation were discovered and put into practice ; and above all, by placing premiums upon the exportation of grain, the productive power of land was much enhanced. It is stated by Prof. Thorold Rogers that the real wages of workmen in England was greater in the middle of the century than in any succeeding years. This prosperity largely increased the effective wants of the people, and even before the progress of invention, the importation of cotton goods from India was suddenly expanded. But it was not until 1760, when new factories were established and machinery began to be used, that English agriculture entered upon the most rapid stage of its development. Arthur Young, writing in 1770, ascribed to the preceeding ten years "more experiments, more discoveries and more general good sense displayed in the walk of agriculture than in an hundred preceeding ones." In spite of the fact that a large portion of the rural population was drawn to manufacturing towns, the enclosure of common fields proceeded twice as rapidly as before. Grass and root culture was extended ; improvements were made in the breeding of sheep and cattle ; small farms were consolidated ; and agriculture, in a large measure, fell into the hands of intelligent farmers. At the same time, the means of inland transportation were improved by building canals, and by constructing roads. The concurrence of all these circumstances created new and vigorous wants among the rural population, and it is safe to affirm that this extension of domestic wants permitted that sudden expansion of the cotton and lately of the woolen manufactures. Had the condition of the country remained as it was in the seventeenth cent-

ury, it is not probable that the inventions of Arkwright and Hargreaves would have quickly come to be of such practical importance ; nor is it possible that, without their inventions and the consequent rise of factories, agriculture could have made such brilliant progress as that of which we read in the pages of Arthur Young. Herein lies the secret of that unparalleled success which attended the efforts of England during the latter part of the last century; the two great industries, agriculture and manufacture were developed side by side.

Negative evidence in support of the economic law thus disclosed, may be sought in the condition of Japanese industry. It has been tottering upon one leg without the support of the other. Since the wars of the Restoration, there is no doubt that the distinction of privileged classes, the changes of fashion, and the sharp competition of imported goods, have all combined to depress native manufactures. We have already seen how, since the opening of the new commerce, silk manufactures were crushed by the influx of cheap cotton and wollen goods. The same was true, even to a much greater degree, of the cotton manufactures, which were firmly established in various provinces under the Shogun government, and of the oil and brewing industries, which have to compete with American petroleum and French wine. Such a sudden and ever increasing check upon the Japanese manufacture occasioned a corresponding depression in agricultural industry. These influences, combined with the commutation of tax-in-kind into money-tax, have fallen so heavily upon the agricultural interests as to produce universal depression. Undoubtedly the Civil

Insurrection of 1877, whatever may have been its proximate causes, was inflamed by the malcontent thus engendered. But at this crisis, the course of events was diverted. By the issue of irredeemable paper money, consequent upon this war, the money price of agricultural products was suddenly raised, and farmers, thus encouraged, steadily increased production. For many years high prices were sustained and prosperity was enjoyed. But the resumption of specie payment in 1887, has been followed by a fall in prices. And, as is agreed on all hands, the farmer is sure to suffer, no matter whether the harvest be abundant or whether it be scarce. As we have already observed when discussing population, a large portion of the people is outside of agriculture, and under the present condition of national economy, there is not sufficient employment to enable this portion to secure good wages. Hence there can be no varied and efficient demand for agricultural products, and the presence of a surplus, small as it is, exercises the most precarious influence upon the price of the whole.

The industrial problems in Japan remain yet unsolved. Heretofore the government seems to have acted on no fixed principles, nor have the principles as yet assumed such definite shapes as to constitute dividing lines between political parties. Questions of a purely political nature are so engrossing that industrial problems are largely overshadowed. Moreover, under the present treaties with western powers, the control of the government over customs duties is so narrowly restricted that any scheme of commercial policy, however brilliant it may be, is destined to remain in the field of speculation. Yet

the time is not distant when the questions of land-taxes, of customs duties, of the regulation of labor, and of state-industry, will demand urgent attention, and on the floor of the future Diet, there will arise the accustomed struggle between protectionists and free-traders, between statesmen and theorists, between class-prejudices and business interests.

Whatever sentiments may for the time being be imposed upon the public, the general course of the future movement is not difficult to predict. If our analysis of industrial progress be correct, we may lay down two propositions which should be fulfilled in the course of the industrial transition.

First. The efficient want of the people should be extensively, rather than intensively developed. The principal feature of the feudal society has been the high development of wants among certain limited classes, while the majority of the people were left destitute, their wants being confined to the mere physical necessities. Important changes in this partial development of want must occur, before the ground is ready for the growth of a strong industry.

Second. Agriculture should be thoroughly reformed in the interest of manufactures, and manufactures be established in the interest of agriculture. Paradoxical as it may seem, it is nevertheless true that these two industries are so closely united and their mutual reactions are so essential that no permanent progress is possible without their simultaneous growth.

In view then of our special circumstances, let us proceed to inquire, somewhat in detail, what measures are necessary in order to reform agriculture and to establish manufacture, and how the attainment of one purpose is presupposed in that of the other.

2.—Criticism on the Japanese Agriculture.

The impression has been common among native publicists that land in Japan is already so crowded and pressed into the full productive capacity that there is little room for its further improvement. From what has already been said the reader will be able to judge how far such an assumption is based on fact. So far as rice cultivation is concerned, it was shown, that the present methods of farming give a fair return; but in the case of hardier grains, wheat, barley, and naked barley, the yield is so meagre that it scarcely deserves to be mentioned. We have observed that in the best localities only, the average yield is twenty-two bushels of wheat and thirty bushels of barley per acre; that there are many districts where the average stands as low as seven or eight bushels of wheat, and that in 1887 the average return for the whole country was twelve bushels of wheat and a little over seventeen bushels of barley per acre. Compare with these the productive power of the soil in some of the European countries. In England, as far back as the time of Arthur Young (1770), the average crop was twenty-five bushels of wheat, while in 1882 it reached thirty-four and two-tenths bushels in Cambridge county.¹ In Flanders, Jersey, and Guernsey, where the prevalence of small farming admits us to a more favorable contrast with Japan, the average wheat crop is ascertained by official authority to be from thirty-six to forty bushels per acre. "Of barley, a more congenial cereal, the average in Flanders is forty-one bushels, and in good ground sixty bushels."² When

¹*Journal of London Statistical Society*, 1883.

²*Britannica*, ninth edition, "Agriculture."

you examine some particular farms which are exceptionally good, a wheat crop of fifty-six bushels in England and eighty bushels in Flanders is not unknown.¹

There is another method by which the productivity of land in Japan may be compared with that in other countries. The amount of the surplus product which remains after the farmers are fed will measure the efficient demand of the farming community. Hence in a country where the proportion of land to the agricultural population is great (assuming the productive power of land to be the same), the industrial organism will be the more active and progressive. In England there are seventeen acres for every farm, while in Flanders, where population is most dense, there are still over four acres. But in Japan, as we have seen, there is only from half an acre to one acre per capita in most provinces, with only a few notable exceptions, where there are some two acres and a half.

If we calculate upon this double basis, namely, the productive power of land and the per capita quantity of farms, we shall obtain a comprehensive idea of the extent of the differences between the agricultural resources of these countries. In England, each person in agricultural pursuit will secure some five hundred and forty-four bushels of wheat a year, in Flanders about one hundred and sixty bushels, in Japan not more than twenty-six bushels of rice and twelve bushels of wheat, assuming that he is able to get two crops a year.

Such comparisons as the above give tangible evidence as to the dependence of agriculture upon the

¹ *Ibid.*

co-existence of other industries. If now we inquire directly what are the principal causes that are hindering the growth of the Japanese agriculture, we shall find them to be the poor means of transportation, the high rate of land-taxes, the bad system of land-tenure, and the lack of scientific knowledge on the part of the farmer.

(a) *The poor means of transportation.* Since grain cannot be cheaply carried by the present means of inland communication, each locality is obliged to be almost self-supporting. Where population is dense, land is forced to yield the largest possible amount, but, in the sparsely settled portions of the country, only a small part of the land is brought under cultivation, and that in a very loose manner.¹ No strong inducements are presented to farmers to enlarge their production, for they have no distant markets, and a large surplus on their hands is sure to bring down the local prices. The only effective remedy for this is to open foreign markets for agricultural products. Hitherto rice has been exported to Europe,

¹Dr. Feca, a careful German observer, made the following remarks in 1884: "The cost of transporting rice, which is the highest-priced product,—fifty kilogrammes being worth about five marks,—amounts to the marketprice of the rice itself by the time it has been carried only twenty geographical miles, on the best highways, while in Germany, according to Settegast, wheat and other grain, at only twice that market price, say ten marks per fifty kilo., can be transported on ordinary roads 66.67 miles, on turnpikes 100 miles, and by rail 400 miles, before the cost of carriage reaches the market price. And on the poorer roads of Japan, rice does not bear a transportation of five miles. We find accordingly that at some distance from the coast, even good soil has not been brought under cultivation, where the margin of profit is too narrow for it, while near the coast even sandy dunes, certainly very poor soil, are successfully cultivated."—As quoted by J. J. Rein, pp. 17-18

especially to England, and wheat to China and Russia. This export trade amounted to \$3,500,000 in 1887. Owing to the superior quality of Japanese rice over the products of India and Jamaica, its exportation would be largely increased, if encouraged by the establishment of trading companies and by abolishing export duties. Such exportation, if fully established, would tend to keep up the price at a higher level than under present conditions is possible, and the price so determined would be subject to fewer fluctuations. Encouraged by such measures, farmers would be induced to extend their fields and to adopt better methods of cultivation.¹

In this respect Japan has much to learn from the English statesmen of the eighteenth century, who put premiums upon the exportation of cereals, whose principles, though much perverted, still took their origin in the economic necessities of the transitional stage in which England was then placed.

The territorial distribution of cultivated lands, as we have seen, is very unequal, and specialization in the agricultural industry is very imperfect. Under the present means of transportation the people are obliged everywhere to raise food for their own consumption, paying no regard to the fitness of their products for sale. Were it not for this fact, the tea and mulberry plantations in the central part of the country, grazing industry in the north, and all cereal products in the luxuriant southwest, might be largely expanded. What is needed most at the pres-

¹The exportation of goods from Japan was hitherto possible only in five treaty ports. But in August, 1889, nine new ports were opened for the direct exportation of the five important articles: rice, wheat, flour, coal and sulphur.

ent stage is to diversify agriculture and to establish the mutual dependence of one part of the country upon the other. And the only effective measure for these ends is to extend railroads and to continue the improvement of high roads, which is already begun on such an admirable plan.

Another difficulty that arises from the poor means of communication is the want of cheap manures in the interior. All along the coast farmers have free access to sea-weeds, guano, fish, lime, and the like, but there is no way by which to carry fertilizers into the interior at small expense. Hence in the central and northern parts, where population is sparse, there may be found large tracts of land not brought under cultivation. In France the same difficulty was experienced for centuries, but since the introduction of railroads, various companies have made generous reduction in the freight charge of fertilizers, and have thus assisted in the distribution of chalk, marls, and guano all over the country. In 1856, M. Leonce de Lavergne, speaking of the large tract of the silicious soil which traverses France, from northwest to southeast, says: "In every part where it is possible to make use of lime as a fertilizer, the soil has been transformed visibly, . . . cattle have been improved and have multiplied, and wheat has been substituted for rye."¹ Undoubtedly in the northern part of Japan similar changes will take place if railroad facilities are extended.

(b.) *The high rate of land-taxes.* That the present rate of land-taxes is high, has been the complaint of all, but how high, is not often carefully computed. According to the law as it was amended in 1876, the

¹ De Fovⁱ

national tax is two and a half per cent. of the "legal value" of land, and the maximum limit of the local tax is one-fifth of the national tax. Supposing the "legal value" of two-crop land to be two hundred yens per acre, the amount that goes to the payment of taxes will be about six yens per acre. Suppose again that the annual yield of this land is twenty-six and four-tenths bushels of rice and twelve bushels of wheat. At the current prices in 1886 this product would be worth thirty-six yens and forty sens. If now we compare these taxes with this productive capacity of the land, they will be found to be equivalent to an income tax of sixteen per cent. Placed under such a burden, it is no wonder that farming is still abandoned to the control of stupid farmers, who have neither motive nor capital to introduce any extensive reforms, and that in agriculture alone no general improvement has as yet been accomplished, notwithstanding the moral and political innovations that have taken place since the days of Feudalism. Any progress in rural economy is impossible, unless intelligence and capital are drawn to this channel of industry, but so long as land is taxed more heavily than other property, and farming is consequently less remunerative than other industries, it is futile to hope for intelligent enterprise in agricultural pursuits.

The present situation of Japanese agriculture indicates an essential phase of industrial transition. The ideas that land is the basis of national revenue, and that peasants are doomed to toil to support the state, are still lingering in the system of taxation; and before the appearance of that industrial organization, whose efficiency depends mainly upon the produc-

tive power of each free citizen, this revenue system must be thoroughly revised. In England, where Feudalism never had a firm hold, the problem worked itself out in the course of history. But on the Continent this transitional stage was signalized by momentous reforms in rural economy. In France, where land was burdened by taxes and minute feudal restrictions, agriculture was set free by the famous edicts of 1791, whose first article runs as follows: "Le territoire de la France, dans toute son étendue, est libre comme les personnes qui l'habitent."¹ In Prussia the medieval system held its ground until the beginning of the present century. The enfranchisement of the German *bauer*, who was oppressed, stupid, and thriftless, was forced upon public attention, and in 1807 statesmen like Stein, Niebuhr, and others were commissioned to draft a land law that should effect the transition from medieval to modern agriculture. In the next year a law was enacted which secured to peasants the complete control of their own labor and raised them from a state of villenage to the freedom of land-owners. In Russia, a similar change took place as late as 1861.

In Japan, "The Land-tax Reform Acts" of 1873 must be regarded in a similar light, but the changes thereby accomplished are far from being adequate. Perhaps, under the circumstances, they were all that could be done. But the development of foreign commerce and of the industrial activity of the people since then, makes it imperative to so reduce the present rate of land-taxes that farming will be profitable and attract both capital and enterprise to this

¹M. L. de Lavergne, *Economie Rurale de la France*, p. 10.

important branch of industry. How such reduction can be made under the existing circumstances will be suggested in a subsequent part of my essay; for the present it is sufficient to say that if the reduction be made with due caution, the credit of farmers will be much enhanced, and many agrarian reforms, whose urgency is recognized by all, may be entered upon with confidence. Nor need we fear that the total revenue will be decreased thereby; for not only will the extension of cultivated lands increase the amount of taxable real estate, but the values of other property also will be enhanced as a necessary consequence of the prosperity enjoyed by agricultural classes.¹

(c.) *The bad system of land-tenure.* Attention has already been called to the diversity of systems of land-tenure, prevalent in different provinces, and also to the importance of some legal adjustment of the relation of the tenant to the land-owner. Wherever land is entrusted to peasants who are poor and stupid, and in whose methods of cultivation the owners of the land take no interest, progress in the art of agriculture is next to impossible. In England, since the eighteenth century, country life has been a fashion of the nobility. Agriculture, either as a business or a pleasure, was the "reigning taste" of the age. "There was scarcely a nobleman or country-gentleman," says Prof. Rogers, "who did not betake himself to the cultivation of lands, not merely in the sense of keeping a home farm in his hands, which he managed by his steward, but as an overseer of his

¹ When the national tax on land was reduced a half of one per cent. in 1876, it was expected that the reduction would amount to 8,000,000 yens. But to the surprise of all it was found that the total revenue of the government did not suffer much change after the second year.

land, and as an experimenter in husbandry." "Citizens who were engaged in London business five days in the week were farmers for the other two."¹ "The farming tribe," says Arthur Young, "is now made up of all ranks, from a duke to an apprentice." It was this universal passion for agriculture, continued till the second quarter of the present century, which in England reclaimed the arable lands, and which rendered it possible for successful experiments, such as those of Tull and Bakewell, to become the general practice of the people. In Japan, unfortunately, most of the large holders are nobles and town-people, who, as has been shown, let their land in small pieces to poor tenants. It naturally follows that agricultural pursuits are held in contempt. Nothing is more important at the present stage than that the land should be brought under intelligent supervision, and that farms which are scattered and split into small pieces, should be consolidated, and to this end it is essential that the nobility and the wealthy should take some interest in agriculture. Indications of a movement of this sort are not wholly wanting. There are some large land-owners who have become practical farmers. Count Tachibana, who lately retired to his old dominion, has started an experimental garden of about ten acres, and is trying foreign seeds and new methods of cultivation. Let such noble examples be followed by other gentry!

Much has recently been said for and against the desirability of introducing the system of large farming. If its advocates propose to adopt in Japan the practice prevalent in England and in the United States,

¹Thorold Rogers, *Six Centuries of Work and Wages*, pp. 469-470.

where farms of two or three hundred acres are common, it is evident that no scheme could be more chimerical. The high cost of land, the nature of the crops, and the present mode of occupancy would inevitably defeat any such scheme in Japan. But at the same time it must be admitted that no material progress is possible so long as the land abandoned to ignorant tenants is worked according to prevalent customs. Being divided and subdivided into small pieces, which are not contiguous, but scattered over a wide area, much time is wasted by farmers in moving from one of their allotments to another, and, consequently, no large operations can be undertaken, nor methods applied by which labor may be saved, nor the fertility of the soil increased. The necessary steps for the consolidation of these small farms are not difficult to see. The rise of agricultural wages, the establishment of large farms by enterprising landholders, and the introduction of sharp competition between the various sections of the country, by opening up internal communication, would be adequate to break down the isolation of small tenants, and so to modify their methods of farming that agriculture would become at once more productive and less expensive. Already large farms are being established in the North, and it is hoped that these will serve as a model for the rest of the country.

(d.) *The lack of scientific knowledge.* The system of land-tenure above described makes it almost impossible to diffuse any sort of scientific knowledge among farmers. Bound by traditions and superstitions, they are extremely reluctant to make use of machinery, or to adopt new methods of cultivation. I have alluded several times to the importance of

stock-raising, and to the extension of tea and mulberry plantations. Yet an attempt to realize such reforms would fail if entrusted to the tenants. The necessities of the present demand that the line that now separates the agricultural classes from the other classes in society shall be erased, that greater attention shall be given to literature on practical farming, and that intelligent land-owners in every community shall organize for the purpose of experiment and study, and thus be able to teach the peasant farmer by example.

These reforms should be vigorously pursued as far as practicable, both by the State and by individuals. Yet I am perfectly aware that there are certain things in my proposals, the complete realization of which demands the cooperation of other industrial forces. If these reforms in agriculture could be accomplished by State interference, or by the efforts of a few private individuals, industrial progress would be quite simple. But great social or industrial reforms cannot be imposed from without. They spring rather from the awakening vigor of society itself, the result of conditions which are largely independent of artificial stimulus. Permit me to call attention to certain social conditions which, from one point of view, are to be regarded as essential to attain the end desired: and in presenting these conditions, I shall continue to hold before my mind the course of industrial development in England and in western Europe.

First of these is what may be called the rise of a new code of industrial ethics. The principle that a man works for mere gain, or sells his muscles in the dearest market, is of comparatively recent origin. It

may be dated from the era of invention. The factory system, for the first time, created a class of men who sell their day's work in the open market, and who move from one place to another seeking the highest wages. In this manner the so-called "business relations" came to be separated from "personal relations," and society began to live a distinctly commercial life. This would have been impossible, except in the presence of free communication, large factories, and the accumulation of immense capital; and whatever may be alleged against it, it was the dominating influence of this code of ethics that is responsible for the industrial activity of the present.

In all ages, agricultural population is naturally anti-commercial. Had not machinery been invented and the ethics of the community been revolutionized, agriculture of the eighteenth century would never have experienced such radical changes, first in England and later in western Europe. Thence it was that the rich began to place their capital in land with a view to gaining a fair return upon the investment; and that the poor began to cultivate their farms not merely to earn a precarious subsistence, but to make commercial profit. It is to this spirit that the inclosure of common lands and the consolidation of small farms in England can be traced.

Second among the conditions necessary to industrial advancement is one that springs from the fact that society is active. I refer to the ability of one part of society to absorb surplus labor set free by industrial improvements in another. It is needless here to dwell upon the truth so often asserted, that the prosperity of agriculture depends upon the prosperity of those who are outside the agricultural classes.

But when we apply this truth to Japan, it asserts itself with peculiar force. One of the principal causes of low wages among farm-laborers is the presence of a large class of workmen who are outside the farming class, but whose low wages constantly exercise a depressing influence upon farm labor. Should these unemployed classes be absorbed in manufactures, the reaction upon agriculture would be immediate. The methods of cultivation would be modified. The rate of farm-wages would become the lowest standard from which to measure the cost of manual labor. The general movement of laborers would be from farming to other industries. All this would result in an increased demand for agricultural products, and in a general rise of farm wages.

Not less important, in the third place, are the influences which spring from the growth of cities and from the improvements in transportation, both of which are necessary consequences of active industry. We have already seen to what degree the defects of the Japanese agriculture are due to the poor means of transportation. But we have not seen how a normal development in transportation depends upon the reforms in manufacturing industry. The urban population of Japan is but eleven per cent. of the whole. For the most part, the people exist in self-supporting communities, and consequently no large traffic is possible between cities and towns. Hence it is safe to assume that except in certain densely settled portions of the country, Japanese railroads will not yield a paying rate of profit in the immediate future. The improved means of transportation being an important mechanism of manufactures, it is only when the latter are established in cities and towns,

that railroads, shipping, and public roads are highly developed, and that agriculture can be expanded as well as diversified.

Thus we are brought to see the mutual interdependence of agriculture and manufacture. On one hand, the establishment of manufacture is impossible without reforming existing agriculture in such a manner as to create a large and effective demand for manufactured products among the rural population. It thus appears that agrarian reforms should take the precedence of all others. But on the other hand, a thorough and progressive reform in rural economy can be secured only through the simultaneous growth of manufacturing industry.

Let us then consider how is it possible to establish diversified industries under the present circumstances in which Japan is placed.

3.—How may Modern Manufacture be Established?

If there be any single phrase which will express the ruling principle of recent economic legislation, it is national husbandry. Statesmen no longer look to the temporary gain of individual citizens, but, regarding a nation as a unit, a living organism, which is subject to growth and decay, they strive to increase its vigor and productive capacity. To this end they deduce from certain well known psycho-physical laws, the following practical rule of statesmanship, that the aim of good government should be, to develop the strength and skill of the people, and to encourage economy in the expenditure of nervous energy, by encouraging the use of machinery. To the first of these ends are addressed those laws making provision for sanitary conditions of living, for healthful condi-

tions of employment, and for universal education; while the second is attained by the advancement of the sciences and the arts. But by whatever means the productive capacity of the people is increased, the nation secures the only possible basis of permanent progress, compared to which the existing amount of wealth is of slight importance.

The pertinency of such considerations will be appreciated if we consider for a moment how the fruits of human labor are exchanged for each other in international trade. Suppose, for the sake of illustration, that ten pounds of Japanese tea of a medium quality are exchanged for fifty yards of English calico. The tea as it is produced in Japan will possibly cost the labor of a workman for ten days, while in a factory in Manchester these fifty yards of calico may not require more than two days labor.¹ Now according to a well known principle of political economy, the ratio of international exchanges is not determined by the cost of production, but by the utilities embodied in the products, and so great is the utility—the making power of machinery—that nations which employ it, have it in their power to reduce hand-working peoples to the position of practical slavery. To say that it is for the advantage of these people to continue such exchanges, is but to express in strongest possible manner the extent of their dependence. They give the sweat of their brows, the strength of their muscles, and the energy of their nerves, to obtain what is produced by a short operation of an automatic machine. Here is the secret of

¹The amount of capital needed is not taken into account, but as all capital can be reduced to the terms of labor, the illustration will serve its purpose.

England's wealth, that by her commerce she commands the labor of a large portion of the world. Here also is disclosed the chain which binds the eastern nations to the degraded post of manual labor, from which nothing can redeem them but gaining mastery over the power of machinery itself. Thus for the elevation and enlightenment of society, which ought to be the object of every human government, nothing will contribute more, in these days of international competition, than the extensive use of machinery.

I have alluded more than once to the importance of exporting the agricultural products of Japan to European markets. This, however, I regard merely as a temporary necessity. The final goal at which Japan ought to aim is to establish manufactures and to increase the efficiency of her national energy by the aid of science and of art.

What, then, are the steps necessary for the establishment of diversified industries?

This is a question which introduces us at once to the controversy of Protection *versus* Free-trade, which at the present stage of economic science is still dividing the opinions of thinkers. I know that the views which I have expressed, respecting the nature and growth of society, have been largely shared by protectionist writers; but that there is no essential connection between these views and the theory of protection will be evident after slight reflection. That a society is an organic body, which grows by the interaction of its different parts, is a truth which admits of universal application. On the other hand, the policy of foreign commerce is a question of practical statesmanship, whose right solution, like that of many other

questions, requires the consideration of diverse circumstances, in which no two nations, and no two ages, are exactly identical. Hence what is beneficent in one nation may prove extremely harmful in another. It is very probable, taking everything into consideration, that both the colonial policy of the eighteenth century, and the free-trade policy of the nineteenth century have concurred in building up the shipping and manufacturing industries of Great Britain.

If we study the matter wholly from an economic point of view, it will be found that the protective policy may be effectual under three conditions: (a) A nation must possess a large population and an extensive territory. (b) The raw materials necessary for the manufactures which are protected, must be produced at home in all varieties. (c) The intelligence and effective demand of the people must be developed equally with those of foreign nations.

The ultimate analysis of the theory of protection leads to reliance upon the home-market as the principal means of industrial expansion. Hence only in a country where there are unlimited agricultural resources, and where there is a large and constantly increasing population, whose demands are strong, can any national advantage be expected from protective measures. And if protection has contributed in any degree to the unprecedented growth of the United States, it is in the concurrence of these three circumstances that we have to look for its special efficacy.

But in Japan, these conditions, so necessary to the efficacy of the protective policy, are not found. It is true that Japan has a large population, but the

smallness of her territory, and the high price of land, render it futile to expect the development of a home-market by means of agricultural expansion. From what we have already said, it will be inferred that the improvement of Japanese agriculture does not consist in employing surplus labor in the farming industry, but in improving the quality of labor now applied to land, and in consolidating small farms, now cultivated by present occupants.

To use a technical phrase, the agrarian improvements in question are not *extensive* but *intensive* in character. Contrast the condition of Japan with that of the United States. In the United States the resources of nature are practically without limit. The effective demand of the agricultural classes is therefore strong and ever increasing. Upon such a basis Americans are able to build up a strong and vigorous industrial organization, even though they sever all connection with foreign markets. But the case under consideration is quite different. We have pointed out just now the difficulties experienced by the Japanese farmer on account of the presence of a large mass of surplus laborers standing outside of agriculture, and, although there is still a large tract of virgin soil in the North, which can give employment to a part of these laborers, it cannot provide work for all. Thus the question finally comes to this: How is it possible to absorb this surplus labor and increase the productive power of all classes? To this question there is, so it appears to me, but one answer. Manufactures relying upon foreign markets must be established. If an export trade to the United States, to Europe, and to Australia can be developed, an almost unlimited field will be opened for the pro-

duction of those articles for which both the climate and the genius of the people are best adapted.

Let us now consider the second condition for the success of protective measures above set forth, namely, the production of raw materials. Examine the list of articles which are chiefly imported into Japan. First upon the list are cotton yarns, white and brown sugar, cotton cloth, petroleum, woolens, and mixed goods. In the total of imports for 1886, amounting to 32,099,750 yens, these commodities stand as follows :

Cotton yarns.....	5,913,212	yens.
Sugar.....	5,640,434	"
Cotton cloth.....	2,294,714	"
Petroleum.....	2,682,205	"
Woolen goods.....	2,289,592	"
Manufactured iron.....	2,235,866	"
Mixed goods.....	1,137,756	"

We have already pointed out the fact that cotton produced in Japan does not meet more than one-third of her domestic consumption, and that domestic sugar, extracted from sorghum plants, the cultivation of which is quite extensive, supplies but one-half the demand. In regard to wool, it is safe to say that there is as yet no native production, and owing to the moist climate, the many attempts to introduce sheep-grazing have been without success.¹ Such being the amount of raw materials produced at home,

¹"Gaertner expressed the opinion that the soil and climate of Japan were ill-adapted to sheep-raising, because the fodder they produce is too long and juicy, and that all attempts hitherto made to domesticate sheep have failed for this reason." Rein doubts the unfitness of the soil. "But in view of the fact that sheep-raising succeeds best in countries with a dry climate, the chief obstacle to it in Japan is more likely to be in the damp atmosphere and frequent summer rain."—Rein, *The Industries of Japan*, p. 184.

how is it possible to establish the manufacture of cotton and woollen goods by imposing high protective duties upon their importation? Such measures will surely cut off the total amount of consumption without any immediate prospect of expanding industry.¹ And when we consider the geographical situation of Japan, the extension of her foreign trade with South America, Australia, and the islands of the Pacific seems to be a comparatively easy task. In this manner she can gather raw materials upon which to employ the skill of her workmen. The true policy of Japan, therefore, is to expand her foreign commerce, and to develop her shipping industry, and not to obstruct these developments by imposing prohibitory duties on the importation of goods.

We come now to the third and last criterion by which we test the utility of protective measures. Industrial progress consists of the development of human wants, and nothing is more important for a nation in the transitional stage than the creation among the people of new, active, and enlarged wants. It was by developing such wants that the practically free importation of the English yarns and cotton cloth into Japan during the last twenty years acted as a strong industrial stimulus. The further expansion of foreign commerce and the influx of cheap foreign goods will continue to develop and diffuse the higher wants among the middle and lower classes, and when such wants become the

¹It may be claimed that under the protective measure the production of cotton would be encouraged and extended. This as an agricultural improvement is highly desirable, but that it cannot be attained without the evils incident to the protective policy is evident, when we notice that the comparative costs of producing rice and cotton are about the same.

active forces of the community, it is safe to assume that domestic manufactures will spring up in one form or another. But if on the contrary, the price of imported goods be raised by high duties, domestic consumption will be curtailed, the volume of foreign commerce will be decreased, and the industrial development will be hindered thereby. When we recollect the partial development of wants among the Japanese people, to which allusion has already been made, such a consideration will present itself with peculiar force. In a young and growing country like Japan, where the intelligence and effective demand of the people is not equally developed with that of western nations, the presumption must always be against high protective duties.

Our conclusion then, after considering the protective policy from these three points of view is, that, in the present condition of Japanese industry, a protective measure would be highly injurious. Most of the protectionist's arguments have their root in over-confidence in the efficacy of legislative action and in the over-estimate of difficulties in which so-called young industries are supposed to struggle.

It is pertinent to inquire at this point, in what direction it is possible for Japan to develop her industries. Three principal lines of development may be suggested.

First, production for the foreign market. The demands of Europe and the United States for Japanese tea and silk, of China and India for copper, coal, and the products of the sea, have been steadily expanding, and, as there is no material limit in these branches of industry, there is here discovered a practically boundless field for the employment of Japanese

labor. And not only is this true of raw materials, but if machinery be applied and foreign tastes be carefully consulted, the exportation of porcelains, wood-work, woven silk and other works of art may be doubled or trebled without any difficulty.

Secondly, if the foreign trade thus be enlarged and surplus labor thus given employment, if agriculture be improved by the methods we have suggested, it is evident that the home-market will be much extended. Thus the spirit of enterprise will proceed from one industry to another. Radical changes may be expected, especially in the clothing industry, where, as it was observed, owing to the peculiarity of tastes and customs, native producers will be able to maintain their monopoly. Many will adopt new methods of production and enlarge their business. It is only by such processes that the transition can be made from domestic manufacture to the factory system.

Thirdly, not less important are those new industries which spring up from time to time according to the progress of civilization. Conspicuous among these are railroads, mining, shipping, and ship-building. These industries not only create large demand for manual labor, but by their reaction upon other industries, they extend this demand still further. Modern science has created such a vast amount of useful machinery which ministers to our comforts and luxuries, and which can be introduced into a new country at a moment's notice, that, with the increase of activity and the extension of demand, both capital and labor will be eager to embark on new enterprises. Hence in the progress of a nation itself, we find an ever extending field for industries which had no existence before.

I have thus endeavored to explain why protective measures do not meet the present needs of Japan, and to suggest the direction in which Japanese industry may develop with the least resistance. But I should be sadly misunderstood if, on account of the views thus expressed, my readers should think that I give countenance for a moment to the present treaties of Japan with western powers. Indeed, so far is this from true, that I believe, there is very little to be hoped for until these treaties, forced upon Japan by the cupidity of England, shall be changed. The key to the individual situation we have thus far been considering lies in the restoration to the Japanese government of free control over her tariff laws.

The evils that Japan has suffered on account of her contact with European people, does not so much consist in the overthrow of some of her old industries, by the free and sudden influx of foreign goods, as in her inability, on account of treaties, to derive a revenue from that importation. After the war of the restoration her treasury was depleted, and, deprived of this most important source of revenue, it became necessary to increase the burdens imposed upon the land, and this resulted in depressing the entire industry of the people and in checking the development of their effective demand. Perhaps no other nation with the annual expenditure of 79,000,000 yens, gets relatively or absolutely so small an amount from customs duties. In 1886, while exports amounted to 47,934,777 yens against the import of 31,226,558 yens, the aggregate duties upon exports and imports were estimated at only 2,621,774 yens. The yield from import duties alone was a trifle over 1,398,000 yens. Excepting some articles of luxury, such as

gold ornaments, pearl, watches, and wine, which are taxed *ad valorem*, most imported goods pay specific duties. On cotton yarns, white and brown sugar, the most important of all imported articles, the duties, one yen and fifty-six sens, twenty-three sens, and twelve and a half sens, respectively, are imposed per picul (133½ pounds). Reduced to *ad valorem* duties these are equal to an import tax of four and a half per cent. It was calculated some years ago that the duties imposed in England upon Japanese tobacco and tea alone were much greater than the aggregate sum secured in Japan, not only from imports, but from exports as well.¹

It is out of my plan to trace the peculiar circumstances under which these treaties originated or to speak of the many fruitless attempts on the part of Japan to secure their revision. The above figures, dry as they are, are sufficient to show that this extraordinary low rate of import duties not only cuts off revenue, but, by reducing the consumptive taxes to almost nothing, causes the burdens of the State to fall unevenly upon the shoulders of the nation. Nearly one-third of the Japanese people are without land and without sufficient property to pay an income tax, but they are notwithstanding fairly well off, living on salaries or good wages. With the exception of what they pay as excise duties on liquors, tobacco, and a few other articles, they are consequently free from taxation. Hence the heaviest pressure of taxation is upon the agricultural classes, most of whom are the least able to pay. By this unequal pressure, the economic organism is paralyzed and its natural growth is fatally hindered. Hence in the revenue

¹See E. H. House's article in *Atlantic Monthly*, vol. 47.

system we find the kernel of the industrial situation. In the reform of this system lies the means to encourage agricultural improvements, to expand the internal and external commerce, and at the same time to replenish the national treasury. Let us then consider briefly the principles that should guide in reconstructing the revenue system.

1. In the present state of the market there is no doubt that a vastly higher rate of import duties can be imposed without contracting the volume of commerce. Articles that minister to comforts and luxuries, such as woolen and mixed goods, flannels and silk stuff, will bear at least the *ad valorem* duty of thirty per cent. For those things which are strictly the badge of aristocracy a still higher duty should be imposed; while upon cotton yarns, calico, sugar, and petroleum, the articles of universal consumption, a specific duty that corresponds to not less than fifteen per cent. *ad valorem* may be imposed without any difficulty. The annual income that accrues from such changes would probably amount to 6,000,000 yens, and this would steadily increase as the volume of commerce expands.

2. The revenue thus gained should be devoted to reducing the taxes on land, especially on land devoted to the cultivation of rice. The total land-taxes are 42,559,441 yens, of which amount the tax imposed upon lands of the above description produces 30,835,601 yens. If now the rice lands could be relieved of this burden by an extension of indirect taxes, the stimulus thereby given to agriculture would be immeasurable. The process of thus shifting the burden from the farmers to the general public should be continued until the rate of land-taxes is reduced to

one per cent. The indirect effect of such a measure upon the effective demand of agricultural classes will not hinder, but encourage, the expansion of foreign commerce.¹

3. In regard to export duties, the increasing public expenditure demands their maintenance for some time to come. Yet they should be re-arranged in such manner that absolute freedom may be given to the exportation of agricultural products. So great is the necessity of exporting raw products for a thorough reform of rural economy, and so sharp is the international competition, that all obstacles should be removed from the path that leads to market.

Thus we are brought to the conviction that only after a careful revision of her commercial treaties can Japan hope to find relief from the paralyzed condition into which her national economy has fallen. The infusion of new life into agriculture, the development of effective wants, the rise of domestic industry, the extension of inland traffic, the expansion of foreign trade, all these reforms, upon the necessity of which we have dwelt at length, demand that the burdens of the state should be equally distributed among the people, and this can be done only by terminating the present treaties.

¹By a law promulgated in August, 1889, the land-taxes were reduced by over 3,240,000 yens. This reduction was effected by cutting down the "legal value" of the various kinds of land in the country to the amount of 123,630,751 yens. The amount thus saved shall be apportioned to various prefectures in such a manner as will adjust the "legal values" of lands to the scale of agricultural prices now prevalent in each locality. The increased income from customs duties, which are this year advanced over four per cent., partly replaces the loss of revenue occasioned by this change in the land-tax.

Indeed, Japan has so completely outgrown these old treaties that foreign nations themselves would experience many disadvantages, were all their provisions to be strictly enforced. No foreigner is allowed to travel outside of the treaty-limits without special application to the government. Nor can he hold any real estate, nor participate with the Japanese in any industrial undertaking. It was but a few months ago that the following incident occurred. A German vessel from Corea, in order to purchase coal and provisions, cast her anchor in a port which is not open to foreign vessels. Instantly a dispatch was sent from Tokyo and she was obliged to resort to a treaty-port about two hundred miles distant. It is safe to say, without national prejudice, that in the presence of the new life into which Japan is about to enter, the interests of all nations will be served by a thorough revision of those old treaties framed by the ignorant officers of *Taikoon*.

The mutual benefits arising from such revision would be immense. Foreign capital, waiting so long to enter the country, would find rich investments in mines and in public industries. Availing themselves of the cheap labor of native workmen, factories might be started by foreign undertakers in tea, silk, and other industries. On the other hand, the presence of foreign competitors at their own doors would inspire the spirit of enterprise among native producers, would train them in business management, and would induce them to adopt new methods of production. In this way the process of industrial revolution would be greatly accelerated. When we remember that the English woolen industry was

founded by Flemish exiles, and that the first cotton factory in the United States was started by two Scotch immigrants, it is evident that the influx of foreigners into the interior of Japan with ample capital and perfect machinery, would work marvelous changes at the present social crisis. It is, of course, true that such changes bring with them the seeds of social evils, but a consideration of this part of the subject is reserved for the following chapter.

III.

THE PROBABLE SOCIAL CONSEQUENCES OF INDUSTRIAL TRANSITION.

That machinery contains within itself a potential force to bring about great industrial disturbances no one will deny; but as to the extent of such disturbances there are marked differences of opinion. One set of thinkers consider that the sudden changes which they introduce do more harm than good. They claim that machinery is responsible for the decay of skill among artisans, for the changed relation between masters and workmen, and for the antagonism of labor to capital. The favorite example they cite to support this position is the history of the Industrial Revolution in England since 1760. On the other hand, there are many authors of repute who claim that machinery cannot be suddenly forced into use, but that all changes must come gradually and give ample time for society to adjust itself to the new conditions. Upon this point Mr. J. S. Nicholson gives us two propositions as the laws or tendencies which he reads in History.

a. "That a radical change made in the method of invention will be gradually and continuously adopted, and

b. "That these radical changes, these discontinuous leaps, tend to give place to advance by small increments of invention."¹

Writers of this class ascribe those social calamities which occurred in England at the commencement of this century to the conjunction of many causes, such as the Napoleonic war, the high price of grain, the bad system of poor laws and the like.

Which of these views is the true interpretation of English history, it is not my purpose to discuss. Theoretically, both may be true. But neither view can be followed, as though it gave expression to a universal law. The stage of development attained by the society into which machinery is introduced must be taken into account. Nor is it possible to discuss intelligently the probable social effects of machinery without considering the extent to which it can be introduced into a particular society at a particular time. There are many differences between the England of 1800 and the Japan of the present day. Both internal and external conditions are so unlike that it is not safe to argue from the former to the latter.

England grew up, so to speak, with machinery. When inventions were first made, her population was not more than nine millions, and both her agriculture and manufactures were in a primitive condition. The progress of mechanical inventions was at the same time the cause and the source of her growth, and, notwithstanding some disturbances, she was

¹J. S. Nicholson, *The Effects of Machinery on Wages.*

able to adjust herself with comparative ease to the ever-changing industrial conditions. Again, the machinery with which she commenced her industrial revolution was very rude, replacing but a small part of labor-force. The perfection of mechanical methods only comes with passing years. Furthermore, England was free from all foreign competition. She was the leader and dictator of the world's commerce.

Compare with England the present condition of Japan. The territorial extent of the two nations is about the same, but at this point the similarity ends. Agriculture and manufacture in Japan are in the same primitive condition that they were in England a century ago ; her population is already more than the present number in England, and the inequality of its territorial distribution is far greater than that of England at the opening of this century.

Under such circumstances, if machinery, in its present state of perfection, be introduced into Japan on a large scale, we should naturally expect very different results from those that followed its introduction into England. It is not true that its introduction would be necessarily a gradual process. It might be sudden and occur in the most sweeping manner. The old handicraft system of industry might be recklessly attacked, and the present distribution of population might be completely overthrown. Thus social calamities, much more serious than those experienced by the English people, might be repeated.

If we observe closely, we shall see that Japan cannot rely upon the economic limitation to sudden change which did so much to save England from social disaster. For England, these limitations were

found in the gradual progress of inventions, and in the gradual extension of her market. Thus the introduction of a new machine was largely accidental, as much a matter of accident, indeed, as the invention itself. In the history of English industry, there is no economic order in the development of mechanical arts.

But the case is wholly different in Japan. Here the way is open for the free introduction of machinery to a hitherto hermit nation. On one hand, there exists machinery of all degrees of perfection; on the other, there is an industrial community almost independent of other nations. The order in which machinery can be introduced into such a community will not be wholly accidental. There is an economic order which it will naturally follow. And if we ascertain what this order will be, we shall have obtained a clue which will enable us to foresee the kind and extent of industrial disturbance likely to follow.

Such order or law can be established without much difficulty.

1. The law of industrial development requires that internal communication should be first opened. Hence, a large part of new machinery will assume the forms of railroads, steamships, and the like.

2. Machinery presupposes the high cost of labor. Highly developed machines are used only in communities where labor is expensive. Hence, in our case where labor is cheap, simple and inexpensive machines will be first introduced.

3. In introducing machinery into old established industries—for instance, the weaving of silk brocade—there are always certain mechanical difficulties to

be overcome, in order to adjust machinery to the technical requirements of production ; this requires both time and ingenuity. In some cases, indeed, it calls for practically new inventions.

4. Another point which is not often noticed is, that in a group of industries, where the division of labor is carried to an extreme, the expansion of one industry is possible only when dependent industries are also extended. Hence the expansion of a highly specialized industry by the use of machinery is necessarily a slow process, since its influence must be diffused through all related industries.

5. The limited amount of capital in a country also limits the introduction of machinery. This difficulty, in the case of Japan, may be overcome by the importation of foreign capital. Capital thus attained will naturally be applied where there are fertile resources inviting investment, such as the opening of new mines and the building of railroads. It is well to hold this fact in mind, for it will shortly be shown that it is along this line that Japan is liable to experience the most serious evils attending the introduction of modern machinery.

Besides these, there are many other points worthy of notice, such as the length of time required to get experience in handling delicate machinery or in managing large factories ; but all these point to the fact that in such a country as Japan, *the labor first replaced by machinery will be common labor, while skilled labor will for some time be unaffected by the use of machinery.*

Accepting the above consideration as correct, it follows that the social effect of a mechanical revolution in Japan will, in one particular, be the reverse

of what its effect was in England. In England those who suffered most by the introduction of machinery were skilled workmen, and those who were benefitted were common laborers. The latter took the place of the former: or, speaking more exactly, common labor was placed on the same footing with skilled labor by means of machinery. The explanation of this is found in the comparative sparseness of population: in the kinds of machines invented: and in the rapid expansion of the market. But under the circumstances in which Japan is placed, it is upon common labor that the burden of industrial revolution must chiefly fall. It is the poor and ignorant classes that will feel most severely the shock of industrial change.

Here is disclosed the peculiar danger to which Japan is exposed. The pressure of industrial transition will fall most heavily upon that portion of society the least able to bear it. If I have succeeded in showing how uneven is the present distribution of the people, how in the course of centuries towns and cities have clustered along high-roads, and what a large portion of the lower classes is still engaged in the carrying business, it is easy to foresee the serious disturbances that are likely to follow the extension of railroads and other facilities of transportation. Of course, such apprehension will find no sympathy from capitalists, and so long as these undertakings pay the ordinary rate of profit, they will continue to expand until they find some economic checks of their own making. Thus hundreds of thousands of coolies, petty shop-keepers, and inn-keepers, who have depended upon foot travelers for their precarious livelihood, will at once be thrown out of employment.

and unless they adjust themselves to these changed circumstances, so-called industrial progress will for them mean starvation.

With regard to skilled industry, those branches will be the first replaced by large establishments which may be carried on by simple and comparatively cheap machines. In the lumber industry, for example, sawing is still almost exclusively done by hand. It is doubtful if there are more than a half-dozen saw-mills in the whole country. It takes, however, but a few thousand dollars to start a saw-mill capable of replacing the labor of many workmen of good training. The same is true of the nail industry, and of all others which give crude shapes to raw materials. The process of changes in the methods of production for industries of this grade will not be necessarily gradual; and an increasing number of skilled workmen will thus be thrown out of employment and relegated to the field of manual labor.

Another occult influence that comes with the introduction of machinery, springs from its effects on local prices. We have already seen how great is the diversity in the local prices of goods, and it is safe to assume, with possibly an exception for the large cities, that wages in the various localities are fairly adjusted to current prices. But as soon as the extension of railroads and of other facilities for communication equalizes and enhances the prices of goods throughout the country, difference in the rates of money-wages will become a real difference in the amount of compensation. Those portions of the country, therefore, which are densely settled, but which have the least opportunity for industrial expansion will suffer most; and in some cases, the

competition of the agriculture of one section with that of another will intensify such evil consequences. This is just what happened in the southern part of England during the middle of the present century. The establishment of manufactures in the North, the expansion of railroads, the increase of population, raised the price of food four or five times above what it was in 1790, while the wages of the agricultural laborer in the South remained almost the same; hence, the real wages of the latter decreased as much as the price of food increased.¹

Thus in the course of industrial transition, the number of workmen and artisans whose interests will be affected is so great that national industry is thereby exposed to considerable danger. Whether or not this danger can be overcome depends almost wholly upon the energy of the people and upon the sagacity of their rulers. If by the aid of machinery a single man can do what was previously done by ten men, the question whether or not this change is a curse or a blessing depends upon the ability of the nine men thus crowded out of work to find for themselves profitable employment. Hence in the transitional stage upon which Japan has entered every facility must be provided for the lower classes to move freely from one place to another, and from one employment to another; and steps must be taken to overcome their ignorance and superstition so as to render them free and active industrial beings.

There are some Eastern countries where the pressure of this industrial transition fell so heavily upon the lower stratum of the people, and where established methods of industry were subjected to such

¹Cliffe Leslie, *The Movement of Agricultural Wages in Europe.*

sudden changes as to result in lethargy and hopeless inaction. Egypt is a notorious example. It is well known that the cotton famine in Europe, consequent upon the Civil War in America, stimulated the plantation of cotton in the delta of the Nile. For the first time the traditional methods of agriculture which were as old as the reign of the Pharaohs, were abandoned, and Viceroy Ismail, actuated by motives of speculation, borrowed large sums from London and Paris for the purpose of building telegraphs and railroads, of constructing improved methods of immigration, and of purchasing improved agricultural machinery. For a while the enterprise seemed successful. But with the return of peace in the United States, and the consequent fall in the price of cotton, this success was shown to be delusive. Meantime the heavy loans had imposed unusual burdens upon the people; and the attempt of the viceroy to introduce modern methods of industry, so far from infusing new life into the laborers, plunged them yet deeper into the miseries of a hopeless existence. The traveler may to-day see large quantities of agricultural machinery rotting and rusting by the wayside. The evil consequences of this venture were undoubtedly intensified by the prodigality of the viceroy. But the ultimate explanation of this local tragedy in the history of the nineteenth century must be sought in the character of the Egyptians, who have not as yet developed the sagacity and energy necessary to handle modern machinery to advantage.¹

¹Mr. D. MacKenzie Wallace, gave the following as "the one-sentence explanation" of the economic difficulties in question. "Egypt has been for some time, and is still being, deluged with

But in the case of Japan I am not one to take a gloomy view. I fully believe that the general intelligence and versatility prevalent among the lower classes will cause the people to respond quickly to their new interests ; that new industrial energy will be awakened among them by the expansion of railroads and by the rise of factories, and that they will use these instruments to improve their conditions. The shock which existing industry must feel will be but momentary, and men of all classes, impelled by their personal advantage, will quickly learn to adapt themselves to their new environment.

The rôle of governmental action though somewhat restricted, is nevertheless most important. It is imperative that the government establish a sound financial system and curtail current expenditures. But besides this there are two classes of measures by which the government may assist in this period of industrial transition, and which are perhaps necessary in order to establish peaceful relations in the industrial organization of the future.

It has already been observed that the pressure of industrial transition falls chiefly upon the lower classes ; it is therefore necessary that every possible facility should be provided for ease of movement among those classes. Mobility is essential for quickly

European commercial enterprise, European capital, European cupidity, European domination, in a word, with European civilisation, falsely so-called ; and this spirit of material progress, or whatever else the aggressive influence may be termed, acting suddenly on Oriental stagnation and traditional routine, has thrown out of gear the old economic organization of the country, and has produced a state of confusion and impoverishment, containing the germs of a life-and-death struggle between the stolid, stubborn native and the active, enterprising foreigner."—*Egypt and Egypt questions*, pp. 409-10.

equalizing burdens. To this end measures should be taken to make agriculture more productive. Free access should be given to new land in the North, and the burden of land-taxes should be considerably diminished.¹ Unless this is done, mobility of movement among agricultural workers will be obstructed and the adjustment of industry to the new conditions will in so far be checked.

The second class of measures referred to, pertains to the regulation of the relations of capital and labor. Statesmen can never afford to forget the truth that the economy of production is the economy of consumption. It is only where the majority of workmen are well fed and well clad that the productive power of a society can be maintained in a healthy condition. Japan has heretofore had no "industrial classes" in the modern sense of the word, but it is evident that in the course of her industrial transition, such classes will make their appearance. The localism and self sufficiency of the industrial units, which for so many years have secured comparative harmony, will give way to the sharp lines drawn between capitalists and laborers. We have already noticed the unusually low rate of wages and long hours of labor, prevailing in new factories, and if we remind ourselves that the competition of surplus-laborers will tend to keep the rate of wages down, the necessity of some regulations becomes evident. Such legislation need not be undertaken all at once, but the principles to

¹ Since this was written, it has been learned that on June 28th, 1889, a law was passed to the effect that all new lands in Hokkaido, which became amenable to taxes after 1869, shall be exempt both from national and local taxes from 1889 until 1898, and that all those lands which are now in the term of pre-emption, shall be free from taxes for ten years after the term has expired.

which it should conform having been adopted, it should develop according to industrial exigencies. There would thus be secured the basis on which a peaceful adjustment between labor and capital can be made and on which a sound industrial organization can be erected.

It is now recognized by the best authorities that most of the social evils which exist in England, as well as on the continent, are the results of human misgovernment. If the government did not conspire with landlords to oppress their tenants, if statutes were not framed to suppress the combination of operatives, or, to reverse the assumption, if the interests of the rich and poor were equally weighed in the scale of Justice, it is evident that the miseries and calamities of modern society would not be so aggravating as they are at present. It will be fortunate for Japan, if she profits by the experience of industrial Europe, and learns the lesson that full liberty should be allowed the laboring class to resist the selfish oppression of capitalists, and that every opportunity should be afforded them for educating both themselves and their children. In one respect Japan is fortunate. She has neither class nor race prejudices. There is thus presented on her territory the rare opportunity of establishing a harmonious social organization, where liberty will be secured side by side with industrial activity.

In conclusion, let it be observed that the industrial transition of which we are treating, will necessitate a revolution in social ethics. The extension of steam transportation and the use of large factories will necessarily destroy the Oriental communism. It is therefore essential, in order to avert anarchy and

decay, that society should be re-crystallized according to a new code of ethics, adapted to new conditions. We may then close our theme with the thought with which we began it. Industrial society, being an integral part of the social organism, any change in the methods of production and distribution, necessitates corresponding changes in the political and ethical ideas entertained by society. What we have termed the Industrial Transition in Japan, means the ultimate establishment there of individual rights and of political liberty. It means the transition from feudalism to democracy, from communism to individualism.

CHILD-LABOR.

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I.

CHILD LABOR,

BY

WILLIAM F. WILLOUGHBY, A.B.

II.

CHILD LABOR,

BY

MISS CLARE DE GRAFFENRIED.

AMERICAN ECONOMIC ASSOCIATION.

March, 1899.

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BY

WM. F. WILLOUGHBY, A. B.

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INTRODUCTION.

Under the title of the labor problem are embraced all those diverse social movements, breaking out here in one form, and there in another, which are stirring all society to improve the welfare of the people, and to remedy the many apparent injustices of the modern social organization. It has been treated by writers voluminously, but not as yet in an exhaustive and economic manner. Political economy is, however, rapidly proving itself a science, whose laws can be applied to the solution of practical problems. Political economy of to-day is practical rather than philosophical, dynamic rather than statical. The theory of the proper functions of the state has in the past received profound consideration by deep and able thinkers, but as yet no generally accepted creed has been formulated. The attitude of the state towards industrial interests is one of the prominent elements to be considered in a treatment of all social problems. It is however such a wide subject that one answer for all cannot be given. Each problem must be governed by the peculiar circumstances of the case.

Government has had new tasks thrust upon it in late years, with no precedent to guide it in its course. With the greater complexity of business transactions, and the concentration of power in the hands of a few, to directly, or indirectly, affect the welfare of thousands, has arisen the necessity of state supervision of some sort. The line of demarcation between

interference with individual freedom, and the protection of the helpless in their freedom, and the consequent greater or less restriction of the free action of the individual, has become so difficult to draw, that certain classes, in their uncertainty, wish to obliterate it entirely, on the one hand by state socialism, or, on the other, by the extreme individualism of anarchy. It remains for intelligent legislatures to steer safely between these two extremes.

Many realize the imperfections and injustice of our present social organization, and the grounds for the prevalent discontent, but are unwilling to accept any of the radical measures of reform advocated in the different socialistic and communistic plans. They believe that, at the bottom, our present system is good, and is capable of such improvement as will remove these grievances. With them, the writer believes that the true solution of the problem lies in the gradual betterment of the condition of the masses by state action; by such state action as will provide a remedy for some of the most patent and grievous hardships now resting on the working classes. With this secured, a position will be obtained, from which the more difficult and uncertain problems around us can be attacked with greater intelligence and experience. This would require but the extension of state activity into fields already entered by government, such as factory legislation, shorter hours, increased sanitation, tenement-house regulation, and many others.

The progress of factory legislation in the different nations, furnishes us the principal and most interesting example of the gradual education of the people, as regards the proper attitude of government towards

industries. The policy of unrestricted competition in the employment and service of labor has received its death blow, and whatever may be the nature of future legislation, a return to this policy need never be anticipated.

Among these subjects for public regulation, and embraced under the general head of factory legislation, is the abolition, or at least regulation, of the employment of young children in our industrial establishments. No one reform could be accomplished with as little difficulty and friction. From no other would follow such immediate beneficial results, to employer, employé, and the community alike.

Certainly it is desirable that the improvement of the condition of factory operatives should be accomplished, if possible, through their own efforts. The healthy growth of labor organizations has partially enabled, and will continue to render it more possible for the operatives themselves to improve their condition. But unfortunately there is a rapidly growing class of laborers who are not in a position to demand anything from their employers. Children, weak, helpless and uneducated are immured at the tenderest years in mills and workshops, to undergo severe and continuous toil. Incapable of organization and coöperation, they grow up in ignorance and crime; unaccustomed to anything but the lowest condition, they are without ability or ambition to improve their situation. The state alone is in a position to remedy this by suitable legislation, and to put them in a position where they can help themselves. In the case of the habitual drunkard, it is next to useless to tell him to save himself. The only thing to be done

is to remove him from temptation, and by proper treatment, put him where there is some chance of his manhood asserting itself, so that he may then, by his own power, continue in his improved condition. So it is with the children.

Such legislation would not be experimental or uncertain in its results. England has handed down to us a century of legislation of this character. The history of her factory system has been a fearful one, and to us, who are now having the same problem thrust upon us for solution, it should prove an instructive one. It tells the story of a condition of factory labor, that we would do well to avoid by a more prompt and enlightened grasp upon the subject, and a speedier action in regard to it. During these years almost a score of generations of young children lived the lives of brutes; steeped in every degradation of crime, ignorance, immorality, disease and starvation, much of which might have been prevented by earlier governmental action. God grant that a similar condition of affairs may never taint our civilization. If history is ever to be made of avail in the application of past history to present politics, surely we have here a lesson that cannot be disregarded.

The present pages will be devoted to a survey of this one chapter of the great labor movement, its causes, rapid growth, evils, and the many ways in which it affects all society. In the line of practical economics, next to the subject of organized charity, it has obtained, and still claims, more attention from economists and reformers than any other topic in this line of economic thought.

The phenomenon of child-labor, its effects upon society and the legislation in regard to it are insepa-

rably connected with the kindred problems of shorter hours, and women employment. They have been treated together almost invariably in monographs, reports and legislation. Constant allusion must therefore be made to these subjects, though, as far as possible, the limits of the subject will be maintained.

The causes for the growth of child labor are not difficult to discover, and can be briefly indicated. Improved machinery and minute subdivision of labor has rendered their labor as effective as that of adults, though they will invariably accept lower wages for it. Again, children and women are helpless, and have, as yet, proven themselves incapable of effective organization, and seldom carry a strike to a successful conclusion. With the present friction between the employer and employés, the former finds this no slight consideration in his choice of operatives. These, in brief, have been the causes for their employment, and they will continue to operate with greater and greater force until legislation is had upon the subject.

Drawing upon past experience, as we must, for our authority, no treatment of the employment of children in its many economic aspects would be complete without a consideration of the different phases of its existence in England. A brief history of it will therefore first be given.

CHILD-LABOR IN ENGLAND.

It is to England, more than any other country, that we must turn to learn what has been done in meeting the new problems of the modern age. More advanced in her industrial development, she has been the first to feel the evils of any defect in her machinery of production.

In no other department of state action has she left us a more complete and instructive lesson, than in her century of factory legislation. What to us is a comparatively new problem is an old one to her. While we, therefore, have only meagre sources of information, in England a succession of elaborate Parliamentary Reports on Child-labor, during a period of one hundred years, furnish us with complete and authentic information in regard to the condition of child-labor during that period. In addition to these, England possesses many excellent works, by which we can easily trace the condition and progress of the working classes, and the course of legislation in regard to them.¹

¹I have not attempted to indicate authorities in the treatment of Child-labor in England. They are multitudinous, and many of them complete and reliable. Whatever the treatise, the material for it is found in the many Parliamentary Reports on Labor. The First Report of the Mass. Bureau of Labor (1870), pages 417-20, gives a full list of these reports, besides mentioning many other authorities. Among English authorities might be mentioned: *Life and Works of the Earl of Shaftsbury*; *Evils of the Factory System*, Chas. Wing, London, 1837; *The White Slaves*, Cobden; Eden's *State*

The growth of child-labor is inseparably connected with the introduction of machinery, and forms the most important chapter in the changes consequent upon this innovation. In the year 1769 Mr. Arkwright obtained his first patent for a machine for spinning cotton yarn, and commenced manufacturing by machinery. This was the beginning of the factory system. It was he who took the manufactures out of the cottages and farm-houses of England. Then followed Compton's Spinning Mule in 1775, Cartwright's Power-loom in 1787, and in 1793 the invention of the famous cotton gin by Eli Whitney, a resident of the United States. Under the stimulus of the war, manufactures multiplied rapidly, and were accompanied by a great increase of wealth. With this increase of wealth, however, came the growth of inconceivable misery. Thorold Rogers, in his recent book, "Work and Wages," says: "I am convinced that at no period of English history, for which authentic records exist, was the condition of manual labor worse than it was in the years from 1782-1821, the period in which manufactures and merchants accumulated fortunes rapidly." It is the poor man, who, in such times of social changes as this, must bear the burdens of the evils induced by them. For, restricted by circumstances, he is unable to adapt himself to new conditions, and the privations of displaced labor cannot be

of the Poor; Grant's History of Factory Legislation; Taylor's History of the Factory System; Hyndman's Historical Basis of Socialism. Among American authorities are: Special Report on the Factory System, by Hon. C. D. Wright, 10th census; Mass. Labor Reports for 1870 and 1875; Gunton's Wealth and Progress.

The above is far from all of the valuable authorities. A complete list would number hundreds.

shifted by him. Thousands of hands were suddenly required to work at places far distant from home. The small and nimble fingers of little children were by far the most in request. Before the change had attracted much attention, large numbers of children were massed together in factories. Their employment spread rapidly, and its evils soon developed, and alarmed close observers.

The first form of child employment differed greatly from that of later years. The first system originated in the procuring of apprentices from the different parish workhouses of London, Birmingham and elsewhere. Many thousands of these little hapless creatures, ranging from fourteen down to four and even three years of age, were thus sent down into the North. Agreements of the most revolting character were often made between the manufacturers and the different parish workhouses for bands of children for a number of years, in which the condition of the children was totally disregarded. Such, for example, were those provisions whereby it was agreed that with every twenty sound children one idiot should be taken.

It may be safely said that in the period just succeeding the establishment of the modern factory system, absolutely no regard was shown to the condition of the operatives.¹ Labor was then, in its

¹"The beginning of the present century found children of five and even three years of age in England working in factories and brick-yards; women working underground in mines, harnessed with mules to carts, drawing heavy loads; found the hours of labor whatever the avarice of individual mill-owners might exact, were it thirteen, fourteen, or fifteen; found no guards about machinery to protect life and limb; found the air of the factory fouler than language can describe, even could human ears bear to hear the story."—Walker, *Political Economy*, p. 381.

true sense, but a commodity upon the market. The Report of the Select Committee for the year 1816, on the State of the Children employed in the Manufactures, portrays vividly the horrors that the children endured. By that time the number of children employed had increased greatly, very nearly fifty per cent of whom were under the age of eighteen.¹

Children of all ages, down to three and four, were found in the hardest and most painful labor, while babes of six were commonly found in large numbers in many factories. Labor from twelve to thirteen and often sixteen hours a day was the rule. Children had not a moment free, save to snatch a hasty meal or sleep as best they could. From earliest youth they worked to a point of extreme exhaustion, without open-air exercise, or any enjoyment whatever, but grew up, if they survived at all, weak, bloodless, miserable, and in many cases deformed cripples, and victims of almost every disease. Drunkenness, debauchery and filth could not but be the result. Their condition was but the veriest slavery, and the condition of the serf or negro stood out in bright contrast to theirs. The mortality was excessive, and the dread diseases, rickets and scrofula, passed by but few in their path. It was among this class that the horrors of hereditary disease had its chief hold, aided as it was by the repetition and accumulation of the same causes as first planted its seeds. The reports of all the many inves-

¹According to the statement of Dr. Gould, out of 23,000 factory hands investigated by him, in 1816, 14,000 were under eighteen. In the same year a return from forty-one mills in Scotland gave a total of 10,000 employes, of which 4,404 were under eighteen, and of these 415 under ten. A similar return from Manchester gave a total of 12,940, of which 793 were under ten and 5,460 between ten and eighteen.—Gaskell, Report of 1816.

tigations showed that morality was almost unknown. It was not an uncommon thing, in the mines, for men to work perfectly naked in the presence of women; who, in turn, were bare to their waists, and below covered only by a ragged pair of trousers. In the coal mines the condition of the children was even worse. According to the report of 1842, on Child-labor, it was estimated that fully one-third of those employed in the coal mines of England were children under eighteen, and of these much more than one-half were under thirteen. The facts revealed in this elaborate report of over two thousand pages, devoted chiefly to child-labor in coal mines, would be scarcely credible if they were not supported by the best of authority, so fearful was the condition of the children found to be. Down in the depths of the earth they labored from fourteen to sixteen hours daily. The coal often lay in seams only eighteen inches deep, and in these children crawled on their hands and feet, generally naked and harnessed up by an iron chain and band around their waists, by which they either dragged or pushed heavily loaded cars of coal through these narrow ways. In nearly every case they were driven to work by the brutal miners, and beaten, and sometimes even killed. Law did not seem to reach to the depths of a coal pit. Thus these young infants labored their young lives out as if condemned to torture for some crime. But it is useless to dwell longer on their condition. Volumes might be filled in portraying their sufferings. Treated as brutes they lived with no regard to morals, religion, education or health, in a condition that will probably never be duplicated. In the course of time

a process of physical deterioration was seen to be at work among the factory population. They were stunted in size, pallid and emaciated. They were scrofulous and consumptive, and had an aptness for every disease. The foundations were rapidly laid for a population, feeble, shortlived and ignorant, and in all respects debased. The recruiting sergeant already complained that men suitable for the army could not be found in the manufacturing districts.

Where was the boasted freedom of contract of the Political Economists of that day in all this? To the babe of six, bound over to a factory lord, it meant an apprenticeship which left him or her at twenty broken down with consumption, scrofula, or with distorted and crippled limbs, if indeed death had not in the meantime relieved it of its misery. This is, and always has been, the history of employment of children wherever tried.

The injustice of such a system could not long pass without criticism, and action was demanded of parliament to remedy or abate this social disease. To Sir Robert Peel, Sr., belongs the honor of first providing a measure for the relief of this evil. In 1802 he commenced the factory legislation by securing the passage of his apprentice bill. This bill, although of the most limited scope, and applying only to cotton factories, was then considered as a measure, radical if not revolutionary. This legislation, then met with the bitterest opposition from the manufacturers and the political economists. Financial ruin to English manufacturers was predicted as the result of such interference.

With the abolition of the apprenticeship system, the law became inoperative, and unrestricted hours of

labor again became the rule, and the condition of the children became, if possible, even worse than before. Accordingly, in 1815, Robert Peel again came to the front, and in that year secured the appointment of a committee to "inquire into the expediency of extending the apprenticeship act to children of every description." The result of this examination was presented to Parliament in reports for the years 1816, 1817 and 1818. As the result of this was the passage of the Act of 1819. The constant improvement in the laborer's condition, and the absence of injury to the capitalists, which accompanied this legislation, was so marked, that, although with few exceptions it was bitterly opposed by the political economists and the manufacturers, it steadily gained in public favor, and other legislation followed rapidly.

By the Act of 1819 the employment of children under nine was forbidden, and the hours of labor for those between nine and sixteen were limited to twelve hours daily. In 1825 a partial holiday was made compulsory for the children. In 1831 night work was forbidden to all under twenty-one, and eleven hours a day was made the limit for those under eighteen.

In 1833 Lord Ashley, (afterwards Earl of Shaftsbury) became the champion of the laborers by the introduction of a new bill, extending yet farther the provisions of former acts. This act was the most substantial step yet taken in this direction. Its principal provisions were: (1) The employment of children under nine was forbidden. (2) The hours of labor for those between nine and thirteen was limited to eight hours a day. (3) The hours of labor for those under eighteen engaged in worsted, hemp, tow and linen spinning should not exceed twelve

hours a day, and night work was forbidden them. The most significant feature of this act, however, was that relating to school attendance, and the appointment of inspectors to enforce the law.

In 1835 the employment of children under ten in the mines was forbidden. These regulations were, however, by various devices, persistently evaded.

As the introduction and use of machinery became more general, and the subdivision of labor became more minute, the employment of children became more extensive. The Parliamentary report of 1833 estimated that out of 170,000 employés in the cotton mills in that year, 70,000 were children under eighteen. In 1839 there were employed in the factories of England a total of 419,590 persons of all ages, and of these 192,887 or nearly one-half were under eighteen years of age.

In 1842, through the efforts of Lord Ashley, a commission was appointed to investigate the condition of children employed in England, and in 1842 was presented their first report, already referred to. In consequence of this report, the Act of 1843 was passed, which was the most important measure that had up to that time been adopted. It applied to all laborers outside of agriculture. By it "freedom of contract" on the part of women was finally abolished. Women over eighteen years of age were put in the same category as young persons, and their toil limited to eleven hours a day. Children under thirteen were not allowed to work more than six and a half hours a day, and above all, attendance at school was required for the other half day as a condition of employment. By this act the restriction of child employment was reduced to a uniform basis.

It is difficult to measure the advancement thus given to the oppressed children. The foundation for a degree of intellectual and social development among the masses was thus laid, and a greater social opportunity was offered them than they had ever before enjoyed. From this time on, every working child in England spent as much time in school as in the work-shop.

In 1847 Lord Ashley secured the passage of another act, carrying out his plan still more fully. This completed the reduction of the working time for children under thirteen to five hours per day, and to ten hours for all women and those minors between the ages of thirteen and eighteen.

During the following years until 1878 various acts were passed extending the provisions of former acts in one or another direction. Of these, the Factory Act of 1874 was the most important. By it the minimum age for the employment of children was raised to ten.

In 1878, this long line of legislation was fittingly crowned by the act of that year. This act, entitled "An Act to Consolidate and Amend the Law Relating to Factories and Workshops" amends and consolidates in one wide embracing act, all the ground covered by the sixteen acts passed between 1802 and 1878, besides embracing, with some changes, the Provision of the Public Health Act of 1875, and the Elementary Education Act of 1876. It was prepared with the greatest care and fullness, and furnishes an admirable code for factory regulation. Never before had the paternity of government been so strongly declared, and never before had the right of the workmen to demand protection by the State against their

employers been so distinctly asserted. The importance of this act as setting forth the present regulation of child labor in England, demands a closer survey. Its provisions are as follows :

(1) The hours of employment for children shall be as follows : those under ten shall not be employed at all, and those under fourteen shall be employed only half time, either in the mornings or evenings, or on alternate days. (2) The hours of employment for young persons (fourteen to eighteen) shall be from 6 to 6 or 7 to 7, of which two hours shall be devoted to meals, and on Saturdays all work shall cease for them at 1.30. (3) Adequate sanitary provisions are provided. (4) Also ample provisions against accidents. (5) A suitable number of inspectors and assistants are created to insure the due execution of the law. (6) Medical certificates of fitness for employment must be furnished by all under sixteen. (7) Weekly certificates must be obtained from the proper authorities by the employers, showing the required amount of school attendance for every child in their employ

The direct benefits resulting to the lower classes from this act cannot be equalled by any other act upon the rolls of Parliament.

It will be seen from this brief sketch, that the English factory system was one of slow growth and development. One restriction after another was placed upon the employer, until to-day the English laborer is more taken care of by the government than in any other country, Prussia possibly excepted. It can be said of it, as of no other course of legislation, that its results have all been beneficial, not only to the employés, but to the employers as

well, as is now generally admitted by them. Its results have more than justified the acts in every particular. In it can be traced the rise of many important principles in the science of the functions of government. It has been of incalculable service to the progress of the lower classes in more ways than in the direct workings of the act itself. This series of acts first established the right of the State to regulate industry. It was the most important advance and attack that has yet been made upon the *laissez faire* doctrine, that "the less government the better," so strongly insisted upon by the old economists. It is interesting to note the change of feeling on the part of this old school of economists. Although every political economist who wrote before 1850 was uncompromisingly opposed to this legislation, not one who has written since 1865 has ventured to deny the advisability of the Factory acts.

It is also characteristic of this earlier period, that the employers were unanimous in their opposition to any abridgment of their rights to employ children, and in this were supported in Parliament by such men of the school mentioned as John Bright, proud of the name of friend of the people; Lord Cobden, and his associates, and many of the most distinguished of English statesmen. Every improvement in the condition of English labor was only obtained against the combined opposition of these two classes. Too much praise cannot be given to those men, Lord Ashley, Robert Owen, Oastler and others, who labored unceasingly to secure the passage of these acts. This change of front by the employers and economists is one of the most cheering signs of the time.

The results of this legislation have been but briefly

touched upon. The industrial history of England from beginning to end shows most conclusively its great benefits. It has advanced the material prosperity, and the intellectual, moral and political progress of the whole community. It has brought about, as a necessary consequence, an increased production and consumption of wealth; promoted the use of improved machinery, and reduced prices without lessening profits. This has been shown in the progress in every direction. While prices were falling, wages steadily increased from 1850.

The increase in intelligence among the masses has been not less marked. The working children are now, for the first time, receiving an education as a condition of employment. This requirement of school attendance has had a tremendous influence in increasing the number of the lower classes who now attend school.

It would seem that such a history, so clearly marked in its results, would present an example that all nations, having the same problem to contend with, could scarcely refuse to follow. Certain it is, that with our increasing population and the increasing concentration in large cities and establishments, the evils of unrestricted employment of children are becoming prominent, and, in some of our States, the condition of the children employed, is only a few grades better than that of the children in England before the passage of its factory legislation.

CHILD-LABOR IN THE UNITED STATES.

Owing to the especial advantages possessed by the United States as a labor market, and the better condition of the laboring population in general, children were not employed in any considerable numbers until within comparatively recent years. As population has multiplied, and the crowding together of people in large cities has gone on, the employment of young children has largely increased.

To trace this growth is, however, a much more difficult task than that offered in the case of England. There, the regulation of factories and labor was the single duty of the central government, while here it falls to the different State legislatures. As a consequence, while throughout England the laws are uniform, and but one set of statutes and reports, those of Parliament, which are easily accessible, have to be studied; here no two States have the same laws; only a comparatively few have any at all; and information must be obtained through the various bureaus of labor or the reports of their inspectors of factories and workshops.¹ Many of these reports

¹The following are the States which have organized labor bureaus, with the dates of their organization: (1) Massachusetts, 1869; (2) Pennsylvania, 1872; (3) Ohio, 1877; (4) New Jersey, 1878; (5) Illinois, 1879; (6) New York, 1883; (7) Michigan, 1883; (8) Wisconsin, 1883; (9) Iowa, 1884; (10) Connecticut, 1885; (11) Indiana, 1879; (12) Missouri, 1883; (13) California, 1883; (14) Maryland, 1884; (15) Kansas, 1885; (16) Rhode Island, 1887; (17) Maine, 1887; (18) Colorado, 1887; (19) Minnesota, 1887; (20) North Carolina, 1887; (21) Nebraska, 1887.

are difficult to obtain, as the small editions are soon exhausted, and only a few libraries possess complete sets of them. When found, they are often unsatisfactory and are confessedly unreliable. Each department is conducted in its own way. Some, with adequate means, are well organized, and their reports are of the greatest value, while others, with very limited resources, can do but feeble work. The law creating them has, in most cases, been inadequate and too timid. Almost all the reports complain that factory owners refuse with impunity to answer questions, fill up blanks or afford information of any kind, and that there is no law which can compel them to do so. This has been especially so in regard to Child-labor.

Nearly every bureau has, at some time, investigated the subject of the employment of children, and has collected statistics bearing upon it¹.

These reports I have not been able to use as much as I had hoped, as in most cases the commissioner has admitted their incompleteness, owing to the refusal of the factory owners to make returns, or the gross falseness of many of those which were made. For another reason, I have not been able to refer to them, except as to the general conclusions and suggestions contained in them. In no case can the statistics of one state be compared with those of another. In some reports one standard of age has been adopted, and in others, another. Some are thorough, and others unreliable. Yet these statistics

¹Among the labor reports chiefly devoted to the employment of children are those of Massachusetts for 1870 and 1875, Rhode Island 1888; Maine, 1888, and Second Annual Report of New York.

Among the reports of Inspectors of Factories, those of New Jersey are the most important.

are not without value. They are the sole source of information since the year 1880. Many facts of importance are shown by them. From them it can be seen that beyond a doubt, the employment of children is constantly and rapidly increasing.¹

There thus remains but one available source for information in regard to the number of children employed prior to 1880, and their tendency to increase, viz., the United States censuses. Although not given in sufficient detail, yet they are by far the most available collections of statistics that can be obtained. This, however, brings the collection down to but 1880, while the greatest increase in the employment of children has probably taken place between that date and the present time. When the census of 1890 is published, an excellent opportunity will be afforded for a comparison of its returns with those of the former censuses, a comparison, which unfortunately we cannot now obtain.

¹The Second Annual Report of the New York Labor Bureau, devoted entirely to an investigation of child-labor, was summed up as follows: "My conclusions are, (1) The system of child-labor exists in the State in its worst form. (2) The compulsory education law is a dead letter. (3) The condition of the laborers is of a low standard."

The Commissioner of Labor for Ohio in his report for 1887, page 9, says: "My attention has been frequently called to the alarming growth of women and child-labor in gainful occupations. Children are crowded into workshops at twelve years of age; when they reach manhood, they are thrown out of work and their places filled with other boys."

The Inspector of Factories for New Jersey says, Second Annual Report, page 19: "Our examination shows that there are thousands of children in the State who know no change but from the workshop to the bed and from the bed to the workshop."

See also 1st Mass. p. 154. and 6th Ohio 1882, p. 326. Also Article by E. W. Bemis, in American Edition of *Ency. Britannica*, on Workingmen in the United States.

The earlier censuses contain no information in regard to the ages of employés. This was on account of the generally more limited scope of their investigations, and the infrequency and unimportance of the employment of children before that time. In 1870, however, their scope was greatly enlarged, and for the first time, the number of employés in the United States was determined according to age.

The statistics in regard to the employment of children, as given by the census of 1870 is as follows :

Total workers of all classes returned.....	12,505,923
Of these there were children 10 to 15 years old..	739,164

Thus one out of every seventeen employés in the United States engaged in any gainful occupation was a child under fifteen years of age, showing that even in 1870 the employment of children was a considerable factor in our laboring population.

In the Tenth census this subject was yet more fully investigated, and considerable information may be derived from a comparison of its showing with that of 1870. The statistics there given show the following results :

Total number of workers of all classes returned.	17,392,099
Of these there were children 10 to 15 years old..	1,118,356

This is an average of one child out of every sixteen employés in the United States engaged in any gainful occupation, as against that of one out of every seventeen as shown by the census of 1870.

The following table contains a comparison of the results of the census of 1880 with that of 1870:

	1870	1880	Increase	Per Cent. of Increase.
¹ Whole number of persons engaged in Trade and Transportation.....	1,191,238	1,810,256	619,018	52
Number between 10 and 15 years	14,472	28,625	14,153	98
Whole number of persons engaged in Manufacturing, Mechanical and Mining.....	2,707,421	3,837,112	1,129,691	42
Number between 10 and 15 years.....	75,643	133,607	57,964	76
Whole number of persons engaged in Professional and Personal.....	2,684,793	4,074,238	1,389,445	52
Number between 10 and 15 years.....	149,491	235,395	85,904	57
² Total whole number.....	6,583,452	9,721,606	3,138,154	47
Total between 10 and 15 years.	239,606	397,627	158,021	66

Thus the number of children employed in other than agricultural pursuits increased during the decade of 1870 to 1880 sixty-six per cent., while the number of adults increased during the same period only forty-seven per cent. General Walker in commenting on this increase, says: ³"If now we inquire how the same excess is distributed according to age, we shall find that a disproportionate share falls in the class between ten and fifteen years of age, showing a further effect of the extension of the factory system

¹Compiled by the Michigan Labor Commissioner in his Second Annual Report, 1885.

²The number employed in agriculture, both adults and children, are not considered, as not practically entering into the problem.

³Tenth Census.

in the increased employment of young children." In the class of trade, and transportation, the increase of children in comparison to that of adults was as ninety-eight per cent. to fifty-two per cent.; in manufacturing, mechanical and mining, as seventy-six per cent. to forty-two per cent. In professional and personal, as might be expected, the difference in percentage was least, being as fifty-seven to fifty-two per cent. The significant portion of the table is, that in all industries to which the factory system is applicable, and in the severe labor coming under the class of trade and transportation, the percentage of the increase of children employed is nearly twice that of adults.

This statement of statistics is, however, unsatisfactory in many respects, and represents but imperfectly and inadequately, the extent of the employment of young children. In it are included all the Western States, in which Child-labor occurs but little. All kinds of employments are counted together, including many in which children cannot be employed at all. Each state and industry should be considered separately if feasible, as the problem of Child-labor is now chiefly one belonging to the Eastern States, and confined mostly to certain industries. It would be useful to determine, not simply how many children are employed at one time, but the ages of all at the time of their commencing work. If, as this census shows, one-sixth of all the children in the United States are regularly employed, a very large proportion of our laboring population must commence work before they are fifteen. In fact, to-day, in manufacturing communities, most of the children of the laborers, instead of going to school, enter the mines and workshops to aid their parents.

Mr. Crowell, in his article in the *Andover Review* of July, 1885, deduced from the ninth and tenth censuses a table showing the percentage increase of employés by ages in the manufacturing states. This table is as follows :—

	Children Per Cent.	Females over 15 Per Cent.	Males over 16 Per Cent.
Illinois.....	177	127	65
Maine.....	164	2	3
Maryland.....	160	162	37
Iowa.....	127	51	8
Ohio.....	116	60	35
New Jersey.....	95	151	32
Pennsylvania.....	54	65	11
New York.....	43	115	36
Rhode Island.....	29	24	28
Massachusetts.....	23	23	27
Connecticut.....	20	38	22

An inspection of this table shows the extremely rapid extension of the employment in those states where the factory system has reached the highest development. The good effects of wise laws are also shown by the comparatively small increase in the employment of children in those states which have early passed laws prohibiting the employment of children. The percentage in those states, is little, if any, above the normal increase due to the extension of the industries, and larger population. The reports of the labor bureaus of these states show that since 1880, the increase in the employment of children is still less, falling below that of adults.

The industries in which children are mostly found, are those of the cotton mills, where, in 1880, one in every six of the employés was under fifteen years of age. They are also found in greater or less proportion in woolen mills, where they are almost as

extensively employed as in the cotton mills, in paper-box factories, rag mills, boot and shoe, oil, artificial flower, insect powder factories, etc. In mining they numbered one in twenty, and in some localities a much larger proportion. In tobacco, one in twelve, which is much too moderate, as many of the children in this industry work at home in tenements and escape inspection.

There is one form of Child-labor of great importance, which is growing rapidly, and which is but partially reached by the census, and which, if taken, would have swelled the total of children employed to a much greater sum than that given. This is the great mass of children who work at home in miserable tenement houses, in most cases not receiving wages, but merely helping their fathers and mothers in their work. The wife brings home the cotton for the shirts and overalls, the tobacco to be picked, etc., and the child can, as early as five years of age, pick threads, strip tobacco, sew on buttons, etc. Here occurs Child-labor in its worst form. The youngest children are made to work. While children of fourteen and fifteen are found in factories, here infants of five and six labor as slaves to their parents, and out of reach of law and humanity. Helen Campbell estimates that in New York City alone, 24,000 children under fifteen are employed, a great portion of which are in tenement houses.¹

In the foregoing I have confined myself almost entirely to a consideration of the censuses of 1870 and 1880, though the enumeration is confessedly defective. My object has been merely to show that the employment of children has taken a firm hold

¹ *Prisoners of Poverty.*

on our factory system, and that its tendency has been to increase rapidly. It is impossible to state exactly how many or what proportion of the operatives are at present under the age of fifteen, though certainly their number is actually and proportionately much greater than as shown in 1880. However, here and there from the various reports of State Labor Bureaus, and Inspectors of Factories, instances can be gathered showing more strongly this fact.

Mr. Crowell, in his article already referred to, has collected from different reports instances showing the widespread employment of children in various States and industries, and I am chiefly indebted to him for the presentation of the following:

For example, in Baltimore the ratio of children to all other employés in the cotton mill is 1:4; in Augusta, Ga., 1:3; in Allegheny, Pa., 1:4; in Brooklyn (cordage), 1:3; in Lancaster, Pa., 1:5; and in Boston, 12:17. In the six north Atlantic States, in 225 textile factories of special prominence, seventeen per cent. of the employés are children. In thirty-six leading textile factories of Massachusetts, twenty per cent. of the operatives are children. In Pennsylvania the textile industries give work to 5,300 boys of fifteen years and under, and 4,300 girls of fourteen years and under. The mills and shops of Philadelphia alone give employment to twenty per cent. of the city's population, though all of these are not under fifteen. New Jersey employs fully 15,000 children ranging from eight to fifteen years in age. In Patterson, out of a working population of 20,000, there are 3,000 children at work.

In Rhode Island the children compose twelve per cent. of the whole manufacturing population.¹

In the South the employment of children has in later years increased rapidly. In North Carolina thirteen per cent. of the cotton factory operatives are children of fifteen or under. Virginia employs a somewhat greater proportion and Georgia somewhat less.

Of the different cities Chicago has probably shown the most remarkable increase in the employment of young children. The Factory and Tenement-house Inspectors of that city in 1881 reported 4,600 boys and girls of fifteen and under in the factories and workshops. In 1882 they found 6,900, an increase of sixty-eight per cent., while there was an increase during the same year of but eighteen per cent. in the male laborers over that age.

Of the different industries, tobacco manufacture gives employment to a proportion almost equal to that of the cotton mill. In Covington, Ky., the ratio of children of fifteen years and under, to all other employes, in 1885 was 3 : 7. In Louisville, 1 : 5; in Richmond, 1 : 4; and so in all the tobacco-growing regions of both the North and South.

In the American coal fields the labor of children has been found in one of its worst forms. The industrial statistics of Pennsylvania for the year 1882-3, reported 87,000 employes in that industry, of whom 24,000 were boys, and four-fifteenths fifteen years of age or under.

In the iron and steel industry, the census of 1880 shows an increase of boys from 2,400 in 1870, to 7,700 in 1880, an increase of 216 per cent. as com-

¹These results are for various years between 1880 and 1885.

pared with an increase of seventy-eight per cent. of employés over sixteen years of age.

There is thus every reason to believe, from the returns of the census of 1880, and from later investigations made by the State Bureaus of Labor, that the increase in the employment of children has continued as rapidly as ever, except in the few States where laws prohibiting their employment have been enacted and enforced. Never before have the conditions of society, in the absence of legal restrictions, been so favorable to it. From all quarters, from those who have in any way come in contact with the factory system, comes an expression of warning against the unrestricted employment of children; of its degenerating influence on society; and its danger to the healthful development of our institutions.

The legislation regulating the employment of children has been exceedingly various in the different States. Most of it is of comparatively recent date. Some few States have early seen the importance of regulating the employment of this class of labor, but the great majority of them have allowed it to go on uncontrolled. Connecticut and Massachusetts, the first in all measures of economic reform, were here again the earliest to pass laws upon the subject. Connecticut enacted her first law dealing with Child-labor in 1842, and Massachusetts her first effective law in 1866.¹ They were afterwards repeatedly amended, and made more stringent in many respects. Other Eastern States slowly followed suit,

¹ Laws had been made previous to this, as early as 1836, by a slight educational qualification. It is almost needless to say it was not generally observed by the laboring population.

though in no case have they gone as far as in either Massachusetts or Connecticut, New York and Pennsylvania possibly excepted. I have collected in a note below those laws which have been passed in all the States regarding Child-labor, and which are in force at the present time.¹ I have indicated there

1 States.	Ages under which children cannot be employed.	Not to be employ'd unless have attended school during previous y'r	Hours of labor.
Connecticut.....	-13.....	-14, 12 weeks.....	8 (unless otherwise agreed) for all ages.
Colorado.....	-12..... } not in All women. } mines.	-16 (not in mines unless can read and write.	.
Illinois.....	-12..... } not in All women. } mines.	-14, 12 weeks. -16, can read and write.	.
Indiana.....	12(certain industries) 14 (not in mines).		-18, 10 hours.
Iowa.....	-12 (not in mines).		
Kansas.....	-12 (not in mines)...	-16 (not in mines unless can read and write	
Maine.....	-12.....	-15, 16 weeks.....	Males, -16 } 10 hrs. Females, -18 }
Maryland.....			-16, 10 hours in a mine.
Massachusetts....	-13.....	-14, 20 weeks.....	-18 } 10 hrs. All women }
Michigan.....		-14, 16 weeks.	
Minnesota.....			-18 } 10 hrs. All women }
Missouri.....	-12..... } not in All women. } mines.	-14 (not in mines unless can read and write.)	
New Hampshire....	-10.....	-12, whole school y'r; -14, 6 mos.; -16, 3 mos., and can read & write	
New Jersey.....	-12, boy; -14, girl..	-15, 12 weeks.....	-16, 10 hours.
New York.....	-13.....		-18 } 10 hrs. -21 (women) }
Ohio.....	-12.....	-14, 12 weeks.....	8 (unless otherwise agreed) for all ages.
Pennsylvania....	-13.		
Rhode Island....	-10.....	-14, 14 weeks.	
Tennessee.....	-12 (in mines).		
Vermont.....	-10.....	-14, 12 weeks.....	-18, 10 hours.
Wisconsin.....	-13.....		-18 } 8 hrs. All women }

¹This table does not include any laws which may have been passed in 1889.

only those parts of the law specially applicable to the employment of children, and but the main features of each law. In nearly all of these States embraced in the note, other provisions are made, as for instance, requiring certain rules of sanitation to be complied with, fire-escapes to be provided, preventives against accidents, seats for female operatives, etc. In all those acts requiring a certain amount of schooling as a condition of employment, the children, before they can be employed, must furnish a certificate from their teacher that they have complied with the requirements of the act. In most cases the employers are also required to keep a record of all the ages of the children in their employ, their hours of labor, and a certificate from their parents showing the ages of the children. These provisions are scattered through almost as many acts as there are provisions. It would be a great improvement if the example of England were followed in this respect by the States, and each State have all its acts relating to labor and factories collected together in one compact act or code for the regulation of labor and factories. They would thus be more intelligible and accessible, and in the case of inspectors being appointed to enforce the acts, their duty would be made easier and more certain. It would also be advisable if the laws could be made more uniform in the different States. Such is undoubtedly their tendency, as constant reference is made in one report to the good features embraced in the laws of a sister State. In some cases the laws of one State have been enacted in another almost without change.¹

¹ Massachusetts' law has for a long time furnished the model for the other States.

But more potent than all for this purpose are the annual conventions of the chiefs of all the labor bureaus of the States, where methods are compared, lines of action agreed upon, and uniformity of work to a certain extent secured.¹ Of almost equal importance are the annual conventions of the chief inspectors of factories and workshops of the different States.²

From this slight sketch it can be seen that the laws regulating the employment of young children are far from complete and satisfactory. What has been done, has been in the right direction, but in no single case have we approached the complete and well-working law of England. The greater number of the States have no laws regulating the employment of children (so far as I have been able to discover), except, possibly, some provision of a compulsory education law, which is practically a dead letter, so far as preventing the employment of children is concerned. Only eleven States forbid the employment of children under a certain age in all industries. Of these, three place the limit at the low age of ten, three at twelve, and five at thirteen years of age. Seven others forbid the employment of those under a certain age in mines. The provisions in regard to schooling and hours of labor vary widely. The really effective portions of these acts are those which unqualifiedly prohibit the employment of children under a certain age. It is evident that the other provisions are difficult of rigid enforcement, and evasions can easily be made, through the false statements of the employers and

¹ Such conventions have been held since 1882.

² Such conventions have been held since 1887.

parents. Indeed, of these States with laws on their statute books, the great many, as admitted by their own labor reports, are largely inoperative. The reason for this is not difficult to discover. Adequate means have not been provided for their enforcement. This arose in some cases through neglect, but too often through the influence of manufacturers, who, though opposed to the law, pretended to favor it, yet carefully arranged that it should pass in such a shape as to be useless. Thus they gained the credit of favoring the law, and the additional opportunity of arguing that such laws are impossible of enforcement. It is not the intention of this paper to suggest any particular law to meet the ends here proposed. Such should be left to the different labor bureaus. A splendid code for reference can be found in the English Factory Act of 1878. Yet I would mention one point that should always be amply provided for, one which in this country has been frequently disregarded. A chief inspector should always be appointed, with a sufficient corps of assistants, and with large powers to enforce the execution of the law. It has been the universal experience of both England and this country that, where this has not been done, the law has proven useless.¹ The importance of these inspectors, as supplemental to that of creating laws forbidding the employment of children, can scarcely be overestimated. The inspector of factories for Ohio says :

“The importance of the regulation for the inspection of factories, and all the places where people are employed at labor, no matter what the character of the work, must be apparent to every person

¹*Report Inspector of Factories for Ohio*, 1886. See also *First Annual Report Massachusetts Labor Bureau*, 1870, page 136; *Second Annual Report Inspector of Factories New Jersey*, 1884, page 5.

who has given the subject the least consideration. On the thoroughness of such inspection depends, in a great measure, the safety of tens of thousands of our population—men, women, and children. And who will claim that there is anything more deserving of the careful attention of the General Assembly than the lives and health of the people on whom the State depends for its wealth and prosperity? This subject transcends in importance all other matters coming before the legislature, with the possible exception of education. These children will in a few years constitute a large portion of the political power of the State, and their future character and worth to society depend largely upon their happiness or unhappiness, their sound or unsound bodies and minds, their healthy or diseased constitutions in their youth.”

Unfortunately but few States have made this provision, and of these many have powers so restricted as to abridge in greater part their usefulness.¹

¹But eight States, Massachusetts, New York, New Jersey, Ohio, Wisconsin, Connecticut, Maine, and Rhode Island, possess inspectors of factories.

THE POLITICAL ECONOMY OF CHILD-LABOR.

The employment or non-employment of children has a bearing of great importance upon many economic questions. From this side of the question comes almost as much interest as from the humanitarian standpoint. It enters as a factor into many of the most wide-reaching and important topics, which determine the welfare of the working classes. The wages question, competition of labor, the profits of the manufacturers, and above all the standard of comfort of the laboring classes are all largely affected by the employment of children. Its effects on such questions as these furnish the strongest argument for the prohibition of child employment.

To understand clearly how and why the employment of children must necessarily have an injurious effect upon these important questions, of so much consideration to the working class, and to all society, it is necessary to thoroughly understand the true nature and significance of what economists term the "standard of comfort." It is the rule of the standard of comfort, which is the Cardinal test, by the light of which all reforms should be judged and interpreted. Any attempt to better the condition of the laboring classes, which does not ultimately raise their standard of comfort, will be useless, and any cause, which tends to lower it, should, if possible, be removed. If the abolition of Child-labor will not tend to raise the standard

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of comfort of the working classes, it will be of no avail as a means for bettering their condition.

Ricardo, in his famous Iron Law of Wages,¹ first drew attention to and imperfectly expressed the economic law which underlies the standard of comfort. This law, as he conceived it, was this: That wages of labor constantly tend to a minimum, which minimum is that which will barely support the life of the laborer and his family that he may have offspring to take his place. Lower than this, it is evident, the minimum can not be, otherwise population will tend to decrease. Ever since the development of the modern industrial organizations, there has been a large and growing class of unemployed laborers, willing and desirous to work at almost any wages, rather than not work at all. It is the presence of this vast supply of labor constantly on hand that gives force to this law of wages, for the knowledge on the part of the owners of production of the supply of cheap labor, and the knowledge by the workmen that there are always men to take their places, is the most powerful of all levers to sustain the law, and keep the wages of the employés at the minimum. This is why, in the time of increasing wealth, the laborers have not proportionately advanced in prosperity.

I have said that the Iron Law of Wages but imperfectly expresses an economic law. It is true only as modified by the standard of comfort, in the statement of which the economic law finds its

¹This law was first called the "Iron Law of Wages" by Ferdinand Lassalle, and was the foundation of both his and Karl Marx's socialistic reasoning.

true expression. Long experience has shown that Ricardo's law is not the inexorable law, as supposed by its propounder and its advocates, the followers of Lassalle and Marx. By constant repetition and force of habit the laboring classes have become accustomed to a certain standard or grade of living, which is not in every case, that which will barely support life. Thus, the minimum of wages that an American laborer will accept is far above that of the Chinaman, though, possibly, he could live on that of the latter. "Before he will forego those things, which, by habit, have become necessities to him, he will refuse to work, will inaugurate strikes, riots, and other means, which will endanger the peace and prosperity of the community." It is for this reason that the degraded and worst-paid laborers are not the ones who commence strikes and lockouts, but the more intelligent and higher-paid workers, who have become accustomed to a standard of comfort above that of mere existence, and without which they will not work.¹ It is here, then, that political economists differ from Marx and his followers. This law is true only as a tendency. Though the tendency of wages is to a minimum, this minimum is not the bare sustenance of life, but the standard of comfort of each class and nation. This standard is what

¹"As a matter of indisputable fact strikes have not proceeded from the least, but from the most fortunate portion of the working population. It has not been common, but skilled labor that has been concerned. It has not been hopeless misery, but growing ambition, which has prompted nearly all the demands which it has been sought to enforce by the last resort."—*The Manual Laboring Class*," by Prof. F. A. Walker, American Economic Association Publications, Volume III, Number 3, page 14.

each nation and class makes for itself. It is evident that the welfare of the masses is directly dependent upon the standard of comfort, and that it marks their real condition, as above this they can not, as a rule, go, restrained as they are by the tendency laid down in Ricardo's Law of Wages. To benefit the laboring classes their standard of comfort must be raised.

It is in this light that Child-labor has its greatest interest and importance, and by it alone can be finally determined the real effect of their employment on economic progress. If its influence is to lower the standard of comfort, its harm is incalculable; if its abolition will raise it, it will be a true reform and progress. Let us see what the effect of the employment of children is.

The standard of comfort for a class of people is the result of a slow growth, arising from years of habits and surroundings. Children, when employed in factories, are taken at the earliest possible age, and subjected to very degrading conditions. They are often treated as mere brutes or slaves; and, never accustomed to anything but the very lowest condition of living, comfort, or morality, acquire the lowest standard of comfort. This standard they carry throughout life. It is this class of laborers, who, as they grow up, are willing to work at starvation wages, or just what will barely support them in the condition to which they have been accustomed. Thus they tend to force all labor to their condition. This labor is the worst of pauper labor, and to them the standard of comfort coincides with the minimum of Marx, and his law of wages is an iron law, indeed. If, instead of their factory life,

these millions of children had been 'compelled to attend school, and had acquired some education, and experience of things better than they have had in their factories, can anyone suppose that they would work for what they now do, or submit to the conditions, under which they now live and labor? Their standard of comfort would be much higher, and the lowest class of cheap labor would be removed from our midst. It is the few who are willing to work at low wages that drag the others down to their level. The prohibition of Child-labor could not operate otherwise than to raise the standard of comfort for a large number of our citizens, thus having a beneficial effect throughout all society. England's supremacy to-day rests largely upon her wise labor laws.

Let us next consider the effect of Child-labor upon wages, and, more particularly, its influence on the gross earnings of the family. We have seen that in the theory of the standard of comfort is really contained the true law of wages. In the long run, the wage of a class is just what the standard of comfort fixes. Prof. R. T. Ely, in his *Introduction to Political Economy*, says: "It has been the opinion of many of the ablest political economists, for over a century, that what is technically called the 'standard of comfort,' determines the wages of labor. There is so overwhelming an array of facts, gathered from widely separated countries, and from periods so distant from one another, which confirms this conclusion, that it is difficult to resist it¹." Thus, that which lowers the standard of comfort, lowers wages; that Child-Labor lowers wages

¹See page 221.

there can be little doubt; it is, essentially, cheap labor. With improved machinery, it enters as a competitor for work in the same employments, and in the same places and shops with adult laborers. Its wages are, in almost all cases, less than those of adults. Not only does it tend to reduce the wages of adults, but, to a large extent, deprives them of employment. A number of States have made careful collections of statistics of those out of employment, and from these it is found that a much larger per cent. of adults than of children are unemployed. While the children are retained at their lower wages, their fathers are forced into idleness. The employment of children is assigned by these reports as one of the chief causes for the idleness of working men and women.¹ If Child-Labor could be abolished to-day, there are probably enough adults, out of employment and willing to work, to fill their places.

With the introduction of newer and improved machinery the sphere of the employment of children is constantly widening, and the number of them employed increasing. The inspectors of factories in our States constantly report instances where the wife and children work to support the family, while the father, unable to obtain work, remains idle, or performs the menial work at home.² This reversal of the order of nature is one of the evils of the factory system. The children become old before their time, and independent of parental control; while the fathers, becoming accustomed to living

¹ *Massachusetts Labor Report*, 1870, page 56.

² See, for example, "Fall River, Lowell, and Lawrence" (an extract from *Thirteenth Massachusetts Labor Report*), page 11; also *Ohio Labor Report*, 1887, page 9.

on wages of others, rapidly become pauperized, as under the old poor laws of England. As the children grow up, they, in turn, follow the fate of their fathers. The Associated Charities, in the last few years of their vigorous history, have been in a position to, and have investigated carefully the causes of idleness and pauperism; and it is the expressed opinion of those at the head of this work, that Child-labor, as much as any other single cause, is responsible for this poverty, by its early breaking down the health of the laborers, and the throwing out of employment of the adults. The age at which the greatest amount of labor should be performed is thus unnaturally placed in weak youth, instead of strong middle age. What more unecological system of labor could be devised?

More important to the laborers themselves than their individual earnings, is the effect of Child-labor on the gross earnings of the family. The wages of the family is the true gauge of the condition of its members. It is of the utmost importance to clearly understand the exact relation which the employment of children bears to the family income, for it is this point which has prevented a more hearty co-operation of the laborers themselves for its abolition. Though generally admitting that their wages may be lowered somewhat by their children's employment, they have held that they were more than compensated by the earnings of the child. This is a fallacy. The admitted law is, as we have seen at the beginning of this chapter, that the whole family would, on the average, be kept by the wages of its head at the standard of its class, handing on the same lot to an equal

number of offspring. But when women and children are brought in with their labor force, to compete against the labor of the men, the whole family together earns, on an average, no more than the father would earn, if they were not allowed to enter the field against him. "These men can not work for less than that which will furnish them and their family a living, if he alone were allowed to work; but, if his children also can work, in their desperate struggle for existence, they will work for just as much less as their children can earn, as, on the gross earnings, the family can now live at the standard to which they have been accustomed."

Prof. Richard T. Ely, in his *Introduction to Political Economy*, says:

"Among the striking evidences of the truth of the standard of life, as the norm for wages, the fact is especially noteworthy that, as a rule, it seems to fail to benefit the laboring population on the whole, and for any length of time, for the wife and children to earn money, even apart from all other considerations than mere money getting. The world over, when it becomes customary for the wife, or wife and children, to work in factories, it very soon becomes necessary for them to do so to support the family. The wages of the head of the family and the earnings of the entire family, as before, just maintain the standard of comfort among that class of the population. Prof. E. W. Bemis has called attention to the fact that in the textile industries of Rhode Island and Connecticut, where the women and children work, the earnings of the entire family are no larger than in other industries, like those in metal, in western Connecticut, where only the men work."¹

The Inspector of Factories for New Jersey, in his *Second Annual Report*, 1884, page 19, says: "The employment of children has increased with the reduction of wages, and the employment of adults has decreased with the employment of children."

As this is a consideration of the utmost importance, involving the interest of the whole laboring

¹See page 221.

class, and, that we may see that it has the weight of the authority of others besides political economists, I will quote in full the language of our most distinguished statistician, Hon. Carroll D. Wright, as contained in the *Sixth Annual Report of the Bureau of Labor of Massachusetts*, which bears directly upon this point. He says, pages 51, 384, and 385 :

"There seems, within recent times, to have occurred a change in the relation of wages to support, so that, more and more, the labor of the whole family becomes necessary to the support of the family ; that, in the majority of cases, workingmen in the commonwealth do not support their families by their individual earnings alone. The fathers rely, or are forced to depend, upon their children for from one-quarter to one-third of the entire family earnings, and the children, under fifteen years of age, supply, by their labor, from one-eighth to one-sixth of the total family earnings. It is likely that if, by compulsion, the children of the State be taken from work and put into school, there will be individual cases of suffering and hardship, but these will only be temporary. The rate of wages, after a little time, will readjust themselves to the new state of things, and the same amount of money, or a somewhat near approximation to it, will be earned by the head of the family, as is now earned by him in conjunction with his children. To illustrate this a little more fully, we may suppose that, at a certain time, in a certain community, a condition of affairs obtains such as insures that the labor of the husband shall be sufficient for the maintenance of the family, the wife cares for the household, the children are under preparation for the duties of man and womanhood. The manufacturer, all at once, is struck with what we may call a new idea. He discovers that he may lessen the cost of production, and thereby undersell and outsell his rivals in the trade by employing young people—we will say, sixteen years of age. He sees that they will be as efficient auxiliaries to his machines, for three-fourths of his work, as men. He can hire them for a dollar a day, while he is obliged to pay men two dollars. Animated with this idea, he promptly reduces it to practice. But the secret of this low cost of production can not be kept. His competitors learn of it and imitate it. It spreads in all directions. Large numbers of men are thrown out of employment, yet, they must have sustenance ; so, they say to the manufacturer, if you can not give two dollars a day, give me a dollar and a half, there are

some parts of your work for which I am more competent than a young fellow of sixteen. I think I should be worth to you for that work a half dollar more than he is. So a portion of the men are retained, and are comforted for the decrease in their earnings by the reflection that the wages of their children make up the loss. But competition is not content even now. It is discovered by some enterprising manufacturer that children of ten and twelve can do many parts of his work as well as men did them once or as young people of sixteen do now. So a certain number of the latter are displaced, and children, whom he can hire for fifty cents a day, substituted. Indirectly, this operates to displace some adults also, and they and the youth find that those of them who can have employment at all, must be content with less wages, so a dollar and a quarter and seventy-five cents is offered to each, respectively, and by each accepted. This seems to us a fair statement of the manner in which the introduction of Child-labor tends to the decrease of men's wages, and the relegation of large numbers of them for portions of the year to idleness."

The truth of this position has been repeatedly verified. The Massachusetts Bureau of Labor, the best of the State labor bureaus, has examined carefully, and thoroughly, the effect of the employment of women and children upon wages, and the condition of the laboring classes, and has collected reliable statistics bearing specially upon this point. The *Sixth Annual Report*, 1875, furnishes a full individual statement of the average yearly earnings of the father, the wife, and the children; total earnings of the families, number in the family working, etc. The following is a table setting forth these results, which is taken from *Wealth and Progress* by Mr. George Gunton, and by him obtained from the report mentioned:¹

¹See page 171.

TRADES.	Fathers' yearly wages.	Number in family.	Total earnings of wife and children.	Total earnings of family.	Total cost of living.	No. of women and children working.
Shop	\$752 36	4½	\$69 04	\$821 40	\$772 21	4
Metal-workers	739 30	4½	90 51	829 81	723 00	4
Building	721 32	4½	73 00	794 32	740 03	4
Teamsters	630 02	5½	105 00	735 02	729 00	4
Shoe and boot	540 00	4½	209 00	749 00	693 13	1
Metal-work laborers..	458 09	5½	256 08	714 17	697 92	1½
Mill operatives	572 10	5	250 35	822 45	755 04	1
Mill laborers	386 04	6½	284 08	670 12	638 99	1½
Shop laborers	433 06	5½	232 02	665 08	642 08	1½
Out-door laborers....	424 12	6½	257 93	682 05	650 81	1½

From this table it is manifest that it is the total cost of living which fixes the total earnings of the family, and that the wages of the wife and children have not increased the total income of the family, or, quoting the words of Mr. Wright, "Thus it is seen that in neither of the cases where the man is assisted by his wife or children does he earn as much as other laborers. Also, that in the case where he is assisted by both wife and children, he earns the least."

Care must be taken to notice that we are here dealing only with classes. If one class sends its children out into employment more than another, just so much are the average wages of the heads of that class reduced as the child earns, as it is the class that as a whole determines the standard of comfort for that class. Thus, if one family should cease to let its children be employed, the wages of

¹ *Massachusetts Bureau of Labor Report*, 1876, page 71.

the head would not be proportionately increased; but if that whole class to which that family belonged should do this, then the wages of the head must in time rise enough to keep them in the standard of comfort to which they had become accustomed. The result of the successful legislation of Massachusetts, for shorter hours and restriction of Child-labor, has tested and proved this economic law. It can hardly be denied that the laborers are now as well off, and the total earnings of the family as great now without the employment of their children, as formerly they were with such employment. Certainly this is no small gain for the laboring people of that State.

Private philanthropy, through the aiding of a few individuals, can accomplish nothing toward raising the condition of a whole class of labor. This can only be done by action touching the whole class, which, in many cases, can only be done through the instrumentality of the State.¹

¹In leaving this point I wish to say that I am largely indebted to Mr. Gunton, who has in his work, *Wealth and Progress*, elaborated many of the foregoing principles. Prof. Seligman, in reviewing this book in the December, 1887, number of the *Political Science Quarterly*, says: "Mr. Gunton's main point that wages depend on the standard of life has already been frequently advanced by other authorities, beginning with Adam Smith and Ricardo. But no one has hitherto made it the central point of the doctrine, no one has hitherto erected it into the fundamental law of wages, no one has hitherto added the important corollary that production depends on consumption, and that distribution is a necessary part of the process of production. In this consists the importance of Mr. Gunton's contribution to the science of economics. Mr. Gunton's work may be declared, without hesitation, to be the most notable contribution to the subject since "Walker's Wages Question." An article in the *American Anthropolologist*, April, 1889, by Prof. Lester F. Ward, entitled 'Economic Paradoxes,' discusses briefly the same points covered by Mr. Gunton."

Leaving the consideration of the standard of comfort and its influence in fixing the rate of wages, we will now examine the effects of the employment of children from the standpoint of the employer, its effect on his profits, his ability to compete with other countries, etc.

The system of modern distribution rests on the fundamental principle of competition, except in the few cases where restricted by the existence of natural monopolies. In machine-made goods this competition is particularly intense. Manufacturers must employ every means for lessening the cost of production of their wares, or they will be distanced by their competitors. Will not, then, the restriction of their ability to employ whatever kind of labor—the most important element in production—they may choose, affect them vitally?

Competition among manufacturers is of two kinds, that between establishments in the same State, and that between those in different States and countries. As regards the former, free competition is in nowise hindered by the prohibition of the employment of children. As Prof. H. C. Adams has demonstrated in his monograph, *The State in its Relation to Industrial Action*, competition would take place as briskly as before, but on a higher plane. As long as one employs children, the other must also; but if all are prohibited from the employment of children, they still remain on the same footing, as regards each other, but now compete for and with adult labor.

Let us now consider interstate and international competition. The rivalry between manufacturers is here hardly less intense. All, moreover, are not on the same footing. Some States and nations forbid

Child-labor, and others do not, yet all must compete in the same markets.

It is this point, taken in connection with international trade, which has afforded manufacturers their chief objection to any prohibition of their right to employ children. Their claim is, that as long as other nations and States continue such employment, they are forced to follow suit, or be driven out of many quarters of trade. It is, they say, just as if they were prohibited from using an improved machine, of which other nations have the advantage. This is the same objection which has been raised against shorter hours. Plausible as it appears it is in great part unfounded, and has been refuted by experience more than once. We will see that the employment of children and the problem of shorter hours is not the same as that of an improved machine; that other elements enter which may modify the result.

"There is one fact too often lost sight of, that the extent of the market is mainly determined by the consumption of the laboring population. It is estimated that they consume about eighty per cent. of the machine-made goods of the world."¹ The home market is becoming more and more the most important market for each nation; and it is, therefore, to the direct interest of the producers, that the condition of the consumers (the laborers) should be as good as possible. The trade of a civilized colony is of more value than that of a country in barbarism. Now, the non-employment of children means, as we have seen, a higher standard of comfort, and, therefore, greater purchasing power. Very well, the manufacturer will say, but not if this results from higher

¹Gunton's *Wealth of Progress*.

wages which we must pay adults, which comes directly from our pockets. This argument is founded on the mistaken belief in the law, as set forth by Ricardo and Mill, that profits fall as wages rise, or, in other words, that any rise of wages must come out of profits. For an arbitrary rise or advance of wages, we can see but little escape from this reasoning. But it is efficiency of labor in comparison to labor wage, which determines labor cost. An improved standard of comfort and better quality of employés, consequent on a reform of the condition of labor, brings with it, not only higher wages, but greater ability, and honesty. Their work is more conscientiously and skillfully done. Less supervision and watching is required, making their actual labor cost often little more, if any, than before. Compare the wages of labor in various countries, for instance, India, Belgium, Germany, England, and the United States. In all we find a low standard of comfort obtaining where wages are low. Efficiency of labor, less labor cost, and increased power to compete in foreign countries, are found where wages are higher. England was materially crippled at no stage of her progress, as she shortened her hours of labor, and drove the children out of her workshops and mines. Even in the severer test of the competition between different States of our Union, the result has been equally devoid of any injury to the competing power of the State taking such action. It was confidently predicted by many of the manufacturers of Massachusetts that the passage of her ten-hour law would so cripple her that it would be impossible for her industries to compete with those of her sister States. Just the reverse, however,

Efficiency
of labor
O! new
efficiency

happened. Establishments multiplied at a greater ratio than in former years, though wages were, at the same time, perceptibly increased.

Up to a certain limit, then, the improvement of the condition of labor, through increased efficiency, will more than balance the higher wages which accompany it. Thus labor of twelve hours would hardly be denied to be more efficient and cheaper in the end than that of fifteen or twenty hours a day. No more would it be contended that the hours of labor might be reduced to an unlimited extent, with a corresponding increase of efficiency. The problem is to find this favorable limit.

Political economists do not contend that high wages, as such, will not lessen profits, but rather that the concomitant results of such rise frequently counteract this result, and may leave the laborers in a better condition with higher wages, without any diminution of profits. It is but an economy in the application of labor, the predominant element in production.

Yet another important element will contribute to this result. The tendency is for an increased cost of labor to cause an increase in the use of cheaper methods (machinery). It is a matter of common observation that inventions are rarely made in manufactures until there is a strong demand for them. Producers are content with the old methods, until increased cost of production or foreign competition compels them to seek better methods. As long as labor is cheap, it will be the chief element in production, but as it becomes dear, a device will be sought to take its place. This, in the long run, is frequently in itself sufficient to leave the cost of

production as low as it formerly was, with lower wages. The laborers thus, as it were, anticipate the benefits of improvements, and appropriate the larger share of them to themselves.

To recapitulate, then, we would see the following successive results should Child-labor be prohibited. After any temporary hardships and abnormal conditions, consequent upon an introduction of new methods and temporary fluctuations of wages, had subsided: There would be, first, a permanent rise of wages, owing to the lessened competition, and in order to enable the head of the family to furnish the entire support for his family, according to the law of the standard of comfort; second, the immediate effect of this rise of wages would be to infringe, somewhat, on profits, but, as time goes on, the improved condition of the laborers, rendering them more valuable as consumers; their increased efficiency, rendering their actual labor cost less; and the tendency for an increased introduction of labor-saving machinery to take the place of any operatives whose labor cost still remains more than formerly, would, more and more, react to increase profits, while the condition of labor would remain permanently improved. The manufacturers would reserve to themselves the advantages of the introduction of cheaper methods, not reducing the price of articles as they are made, until their profits, if they have fallen, rise to the normal rate. It is, of course, impossible to accurately measure the strength of each of these influences; that their influence is, however, as described, is seen in the results of labor legislation wherever tried, either in this or in foreign countries.

SOCIAL ASPECTS OF CHILD-LABOR.

The evils of unrestricted employment of children, its extreme injury to all society, its direct tendency to degenerate the physical power of mankind, are so evident as to almost make superfluous any mention of them. There is no feature of the modern social problem that is fraught with so much that is heartless and cruel, and that is so lacking in every instinct of humanity.

The first of these evils is the great injustice done to the children themselves. Everywhere, in the field, the mine and the workshop, the children are working for ten, twelve, and fifteen hours of the twenty-four, dwarfing their intellects, and wearing out their little lives, that their masters may gain a larger profit for themselves. Combined with the positive hardships and sufferings that everywhere accompany Child-labor, is the utter absence of all those childish pleasures, which should be connected with the childhood of everyone. To me this is the most pitiful feature of the whole system, to know that probably millions of children have never known what youth and its joys mean. As describing the present condition of factory children, I will extract a few sentences from the language of the Inspector of Factories and Workshops for New Jersey. He says: "Large numbers of children have been examined in all our manufacturing districts. Almost all the children examined

were between the ages of twelve and fifteen. The average age at which these children went to work was nine years. All of them had been accustomed to work ten hours a day, and many of them thirteen and more hours a day through overtime. The general appearance of these children is noteworthy. Children, who had been set to work at an early age, were, as a rule, delicate, puny, and ignorant: they knew the least, having forgotten the little they had been taught before going to work. Children of thirteen years, with little old faces, said they did not care for school or play."¹

The ignorance displayed by these children is, frequently, almost inconceivable. Many have no mental outlook beyond their own factory. Some, as shown by a report of the New York Labor Bureau on this point, thought that the world might be a hundred miles long; that Europe was in New York, and, in fact, displayed an utter ignorance of everything but what they had seen in the factory, and their daily journey between it and their homes. In the same report, quoted above, the Inspector says:²

"At least thirty per cent. could not name the city in which they lived. Sixty per cent. had never heard of the United States or Europe, and ninety-five per cent. had never heard of the Revolutionary war. Many who had heard of the United States could not say where they were."

No State could allow the children in its reformatories and poor-houses to undergo such treatment as

¹*Second Report New Jersey Inspector of Factories and Workshops*, 1884, page 14.

²*Second Report New Jersey Inspector of Factories and Workshops*, 1884, page 18.

the children frequently endure in factories without a storm of indignation arising. Why should not all children enjoy an equal protection? Every child has a moral right to maintenance and education, and to be allowed an opportunity to obtain a proper physical constitution, and a religious, moral, and intellectual development to enable it to prepare itself for its own future wants and happiness. If the condition of the parents is such that they are not able or willing to provide their children with such opportunities, then the State should see that it is done. It is not infringing the prerogatives of the parent, but only protecting the child in its rights. The intimate connection of this subject with that of education has been shown in the character of the legislation which has been enacted.

Children are now brought into the world without the least preparation being made for their moral or physical welfare, and are made the slaves of their parents, who think to increase the income of the family by the miserable pittance which they can earn. At the age of five the child can sew on buttons, pick threads or strip tobacco. In the tobacco industry thirty-seven per cent. of all employes are children. To add to this injury, their occupation is not alone in the factory, but at home in the tenement house, in their bed-rooms, where they are forced to constantly breathe the deadly fumes of tobacco.¹ This, New York is at last striving to prevent, and children are now forbidden to work in tobacco in tenement houses in any room that is on the same floor with their sleeping-rooms.

The effect of the factory system upon the degeneration of the race is a vital consideration, and in

¹*Second Annual Labor Report, New York, 1884, page 331.*

this light is receiving attention from all nations aspiring to military supremacy. In the many elaborate English reports, and in the reports of the states, is contained the testimony of a large number of physicians of the highest standing, who have been interrogated, and all of whom concur in the opinion that a positive and permanent injury is done to the physical condition of mankind.¹ Military recruiting officers all complain that they are able to accept but a small proportion of those presenting themselves in the manufacturing districts, as they are physically unfitted for the service. A recent report by the French military authorities shows that of every 10,000 conscripts fit for service in ten agricultural districts, there were 4,029 rejected, and in ten manufacturing departments as high as 9,000 were rejected. But it does not need the weight of these authorities to be certain of this. A glance at the conditions under which they work will show that such a result is inevitable. Degraded and depraved as this system makes them, the whole field of labor is lowered. No one thing would do more to raise the dignity of labor than the total abolition of Child-labor.

Crime, immorality, illiteracy and pauperism must always be the result of this system. What health or morality can there be where both sexes work together in an impure atmosphere, often with water-closets common to both?

These evils should not be ignored. It should be the effort of every nation to secure, as far as possi-

¹*Second Annual Labor Report, New York, 1884, page 201; Second Annual Report New Jersey Inspector of Factories, pages 24 and 25; First Annual Labor Report, Massachusetts, 1870, page 127.*

ble, good and contented citizens. And forces which will contribute to this in any way should not be disregarded. The nation feels a direct interest in securing the advancement of the health and education, and the morality and well being of the whole community. The improvement of the condition of the laboring classes has now become a matter of vital importance to every nation, as regards its supremacy as a nation. The struggle for predominance is now more severe than ever before. Nations have now no longer a store of sturdy peasants to draw upon, but its strength must be obtained from the city factories. It will be to the nation which builds up by a wise policy in this direction, an honest, sturdy, self-reliant and intelligent class of laborers that the prize of industrial supremacy will come. The disregard of these facts means discontent with existing conditions, and outbreaks against law and order. Even now, the presence of this contingency has to be constantly borne in mind in all important political moves. In the economy of labor to a nation the question of the employment of children has a bearing. In just so much as each individual laborer creates wealth more than he consumes, has he increased the wealth and prosperity of his country. If each child, instead of being put to work, while yet unskilled, and undeveloped physically and mentally, to be worn out and become a drag upon society, instead of a benefit, just at the age when he should be the greatest producer, should be allowed a few more years in youth for training and development, he could labor to a greater advantage in after years and enrich society just so much by his increased labor. The regulation of the employment of children

is but one of the means by which the masses could be benefited, but it is one which must come sooner or later. In it and similar legislation lies the true policy of protection to American labor.

Civilization and progress to-day rest on the integrity of the family. With the weakening of this tie, comes the weakening of the foundation upon which the whole social structure rests. Of the many influences which have been at work few have operated so powerfully to disintegrate family life as the forced employment of women and young children. In either case home life is impossible. The parents and children, separated during the whole day, can feel none of those ties of parent and child. Home comforts are unknown, and early independence of the child removes all ideas of parental authority, while the parent, in turn, too frequently comes to consider his child but an instrument of production, to increase his income. In many cases while the child works, the parent, unable to obtain work, spends his time in idleness on the street corner or at the gin shop.

The query, why Christianity has failed to take hold among the laboring classes, finds a ready answer in the attitude of the church towards such needed reforms as this. Practical Christianity owes a duty to these little ones and these disrupted families, which can not be performed solely in mission schools and by private charity. A vigorous stand on the part of the church could do much to obtain practical legislation. If the laborers could feel that the church was fighting their battles in a practical way, and attempting to strike the evil at its root, instead of alleviating the suffering from the surface, it would not require a super-sanguine man to predict a differ-

ent feeling on the part of the laborers to the church, whose benefit and friendship to them they can at last feel.¹

It is objected, however, that the throwing of children out of employment would deprive many families of their means of support. At first this might be so. Take the extreme case of a widow and her children. If her children were not allowed to work, her wages could not go below what would support all, while now, where the many seek work and the few get it, she will take in work at such payment that by the work of herself and children combined, they can just maintain life. If now, suddenly, while she is accustomed to depend on her children's wages, her children should be prohibited from labor, in her individual instance great injury would result; but soon wages would begin to feel the result of the lessened competition of pauper labor, and would rise so that the family would return to the same level, condition and standard without the aid of the children as it was before with it. We should not forget that a change of policy and new legislation is apt at first, in many instances, to injure some individuals. What new invention or introduction of improved machinery is there but which seriously injures those laborers employed in the old method, who thus suddenly displaced, find their acquired skill useless? But improved machinery is not forbidden on that account.

The time for Child-labor legislation is now ripe. Never before was there such a prospect that its results would be beneficial. We have the example

¹See Professor R. T. Ely's *Social Aspects of Christianity*, 1889, for an interesting exposition of the great field here offered for Christian activity.

before us of England's century of legislation, every step marked by an improved condition of the laborers, and increase in national welfare. We have nearer us the recent enactments in some of our States, all alike attesting to the good results which have flowed from them. The efforts of the Massachusetts authorities have been most noticeably crowned with success. The factory inspectors in that State have been so efficient as to reduce the employment of children under fourteen years of age in that State fully seventy per cent. in the last eight years. Of the 125,942 employés, in the textile factories in the State, in 1888, only 1,616 were under the age of fourteen, and 7,845 were under sixteen. Thus 9,461 in all, or only 7.5 per cent. of the whole body of textile workers were under sixteen. Maine, after a special investigation of the employment of children in that State reported—"It is gratifying to know that Child-labor in Maine is not the serious feature in the labor question that it has been in the past. Although the law, prohibiting the employment of children under twelve years of age, has been in force in this State not quite a year, the benefits resulting are seen in every manufacturing city and village in our State."¹

The policy of State regulation of the employment of children is now willingly accepted by many manufacturers and all the laborers; and is sustained by the approval of the people the world over. I have not been able to find among all the reports of the twenty-one States having labor bureaus and the

¹*Maine Labor Report*, 1888, page 9; see also *Rhode Island Labor Reports for 1887 and 1888*, page 120; see also opinion of Professor Walker, *Political Economy*, page 383.

eight States having inspectors of factories, one report to do other than commend the total restriction of the labor of children under fourteen years of age, and the regulation of that of minors over that age. The trade unions, and other labor organizations are in favor of its prohibition. The declaration of the Knights of Labor, Article 13, recommends fifteen as a minimum age.

Among the many obstacles, intervening in the early attempts to regulate the employment of children, was the disheartening fact that too often the adult laborers, the parents of the children, resisted, or at least remained neutral and apathetic to all attempts to better the condition of their children and themselves. Even when the laws were enacted they were often the most persistent in efforts to evade them. Accustomed to be away from their offspring the whole day, and with family life unknown to them, it is not strange that they should regard their children's welfare with indifference. To them, the prohibition of their child's labor meant but the diminution of their income. This same feeling is still prevalent among the lowest class of laborers in the United States; but among educated laborers and labor organizations the feeling is far different, and they are urging legislation similar to that of England, as one of the principal measures of reform. These organizations are doing a great work in this and similar directions, and I have the greatest hope in their usefulness in the future in urging and advocating social reforms. They now recognize the fact, well proved by economists, that the wages of the wife or children can not, in the long run, increase the receipts of the family, for, in that just as much

as the child contributes to the support of the family, are the wages of the head of the family decreased. *✓*

To many the very existence of Child-labor to any extent is almost unknown, and, in consequence, little attention is paid to it by them. Only those who have investigated for themselves realize the enormity of this evil. It is our duty, however, to recognize that the problem is here with us. The reports of the inspectors of factories and chiefs of labor bureaus show that, in their opinion, this, together with the employment of women, is the great evil of our factory system. In the first convention of the inspectors of factories of the different States, held in 1887, was unanimously passed the following resolution :

*“Resolved, That it is the sense of this convention, that laws should be enacted, in every State in the Union, prohibiting the employment of minors under fourteen in every workshop, factory, or mercantile establishment, as we consider it a self-evident proposition that such employment pauperizes the parents, and enforces illiteracy upon the child, two conditions of society incompatible with republican institutions, and the freedom and welfare of man.”*¹

That all nations are recognizing the importance of this same problem can be seen from the recent invitation, given by the Swiss government to all nations, to send delegates to a labor convention to be held this year, to discuss, among other things, the proper steps to be taken to lessen the employment of young children. The German Kaiser has also issued a similar invitation, for the consideration of the same subjects.

¹*First National Convention of Factory Inspectors, 1887, page 16; Second National Convention of Factory Inspectors, 1888, page 46.*

It is useless and criminal, in the face of this, for legislators to remain idle, in hopes that in time it will disappear in some unexplained way and solve itself, as is too often their seeming expectation in regard to other than political complications. For the reasons already stated, a solution can only come from State action, or, at least, State initiative. To hope for a sufficient improvement in business ethics to induce the manufacturers to voluntarily refrain from the employment of children is more than chimerical. In the fierce competition of production, it is folly to suppose that this vast supply of cheap labor will remain undrawn upon. Although the attitude of many manufacturers has undergone a marked change in this respect, and many desire the prohibition of Child-labor, it is of little or no avail. As long as some of the manufacturers employ cheap labor, the others will be forced to do likewise. The claim for State action rests on peculiarly sound reasons. The laborers are here absolutely powerless to help themselves, if, indeed, they ever had an opportunity to cultivate a desire for anything better than their low condition.

What is demanded by the laborers is greater social opportunity. (All men are not born free and equal,) though this expression represents an ideal to which a true democratic republic should strive. As far as possible let all start equal in the race. It is this lack of opportunity which is the greatest wrong to the children. In all respects they start heavily handicapped. Put to severe labor, and the confining, weakening influence of the poorly ventilated and unsanitary factory, they must inevitably grow up stunted in mind and body, and thus physically and mentally enter unequal combatants with the organ-

ized wealth and power of their fellow-workers. It is this unequal strife that the State alone can remedy. To do this the abolition of Child-labor combined with a broad plan of manual and liberal education, would contribute in a marked degree.

By it, a lever for social elevation would be put down to the very bottom of society where it is the most needed. It is the children of to-day who will determine the character of the next generation. The character of children under fifteen is much more susceptible to social influences than in after life, and it is essential that they should spend that time under the most favorable conditions. Then, more than at any other time, is laid the foundation for the standard of comfort for each individual that will determine its level for all after life.

“In these days of legislative interference, when the shield of the State protects the dumb beast from the merciless blows of his driver, when the overworked horse is remembered and released from his work, when capital expends the time of legislatures, taxes the people for any scheme that promises dividends to the stockholders, when monopolies have charters granted them, then it would seem pitiable if childhood's wants of leisure for rest of body and education for the best period of their lives should be denied them. She (the State) goes on, regardless of consequences, forgetful of the inevitable logic of events, protecting the strong, forgetting the weak and poor, and all, under the false plea of non-interference with the liberties of the people. The children have rights, which the State is bound to respect: their right is to play and make merry, to be at school, to be players, not workers.”

¹*Second Annual Report New York Bureau of Labor*, page 355.

CHILD-LABOR.

BY

MISS CLARE DE GRAFFENRIED.

CHILD-LABOR.

No evil is hopeless when its extent is known and its corrective is rigidly applied. Nearly a century of hard fought legislation was needed to cure the abuses which followed when the English factory system ushered in and abnormally utilized a new industrial force, the toil of the child of both sexes. Gradually has arisen and triumphed the important principle that the moral and physical well-being of the community demands restriction within reasonable limits of the labor of women and children. The factory acts of England dating from 1802 to 1878 assert the right of the State to control industrial organizations that sap the vitality of the mothers and children, so precious to our social integrity. Each successive enactment throttled crimes of the employing class against the poor, the feeble, the young—crimes whose magnitude was exposed by formal commissions of inquiry appointed by the British government. For seventy years the history of English legislation is blackened by the record of the sufferings of baby humanity in mines, chimneys, mills and workshops.

So complete, so far-reaching have been the reforms secured by philanthropists and progressive law-makers that to-day the English factory system is the model for the civilized world, and its effects may be taken as a test of restrictive and opportunity-creating enactments. Within a single decade after half-time

for children was instituted and education was made the condition of their employment, it became rare to find an operative of either sex under twenty years of age who could not read and write. The general intelligence of the laboring class was rapidly developed. As a result of the educational acquirements, of the short time clause for all earners and the prohibition of night and overtime work for women, the increased social welfare of the masses was apparent in rise of wages, greater production of wealth per capita of population, fall in prices, and diminution of pauperism and crime. The last thirty-five years having witnessed the most strenuous efforts ever made in Britain for popular education, the English laborer has relatively progressed more than his trans-Atlantic prototype. During this constructive period for public or board schools, the number of children attending has increased forty-two per cent. in England and less than twenty-five per cent. in the United States, where the free system was already in vogue.

The criminal calendar shows that in 1878 convictions for crime were as 1 to 900 of the population of the United States as against 1 to 1,880 in Great Britain. In 1885 they had fallen to 1 in 3,272 in England, but remain unchanged here, being in 1887 still 1 in 930 of population.

Conditions in Germany, despite compulsory education and universal factory inspection, are less promising. The United States consular report for March, 1889, notes in 1887 a greater percentage of young persons employed, due to the more flourishing industrial situation. In Saxony alone, where the most highly organized factory inspection system prevails,

there was an increase during one year from 19,953 to 24,111, or over 20 per cent. of juvenile employé's between fourteen and sixteen. Besides, 685 boys and 14 girls from fourteen to sixteen, and 465 boys and 8 girls from twelve to fourteen were engaged in the Saxon mines. In every one hundred workers the proportion of boys from fourteen to sixteen rose from 3.9 per cent. to 4.4 per cent. : of girls, from 3 per cent. to 3.3 per cent., while 2.1 per cent. are boys from twelve to fourteen. The number of factories giving occupation to children from twelve to sixteen years of age was 5,607 in 1887, against 4,987 in 1886. Sixty per cent. of the young workers of Baden are engaged in the cigar industry. Inspectors testify to constant violations of the regulations governing the employment of children. The consular report for July, 1889, makes manifest that during 1887 the concentration of children from twelve to fourteen in manufacturing pursuits has increased, 10,652 of them, or 1,000 more than the year before, appearing in industrial establishments. The great number of juvenile workers and the rapid rise in a single twelve-month of the percentage of those under sixteen "call loudly for interference in the interest of the health and morality of the people." All young persons in Germany toil ten full hours a day. ✓

The expansion of American industries invites a phenomenal resort to machinery, and along with it the utilization of Child-Labor. Diversity of laws in various States and the absence of regulations in others bring about in different sections widely divergent conditions. The inspection system, the rigid administration of educational and protective acts, the liberal policy of some progressive manufac- ✓

turers, all combine to produce in favored centres industrial prosperity and high standards of comfort and intelligence. In other localities the inhumanities attending uncontrolled Child-Labor in Europe are in milder form repeating themselves on the free and bountiful soil of this republic. Annually millions of dollars are devoted by Americans to foreign missions, while at home children—some of whom are almost babies—under hard task-masters earn without schooling, without religion, without sanitary homes, without rest or recreation, the money that keeps a roof over them in wintry nights. Young children, who love play and hate work, who would like to be warm and well-fed, but rarely are; who are sworn at in the shops if they laugh, and beaten, perhaps, by a drunken father if their day's pittance does not suffice to buy his dram. In one box factory alone ninety little girls, two-thirds of them under fourteen, most of them plainly only from ten to twelve, toil for such a trifle as will keep no human being in food. Here, especially in vacation, troop the small feet in worn shoes. Some girls and boys are glad to leave dull homes for the excitement of a crowd; others seek work for sadder reasons—mother is ill and cannot wash, or lame Johnny needs a new crutch. A ragged maid of twelve found sobbing at a shop door gasped out: "Pa 'll lick me sure because I've made so little this week," showing two shining quarters in her pudgy palm. One wee vixen, discharged for trifling, wept and begged so piteously to stay that the foreman, imagining that the loss of her place would ensure a whipping at home, relented. Tears then changed to smiles, and the small culprit confessed to a neighbor that her parents objected to her working, but she

Dismal fun, to creep in the black night or gray dawn from the wretched pallet, donning the old outer garments while half asleep, gulping down the meagre breakfast, tramping in snow or slush or icy wind under the winter stars, rushing breathlessly lest the shop be closed at seven and the tardy ones docked. Fun, to sit or stand silent, breathing foul air, in rooms bare and cold or suffocatingly hot. Fun, to swallow a cold lunch washed down by pernicious tea when hot meats may be steaming in home kitchens. Fun, to count and plan how the week's dole shall be spent, and then to be told that the work is all wrong and will not be paid for. Fun, to hear only harsh command or stern rebuke, to drag through weary afternoons, then hurry in the dark to squalid tenements and huddle torpid with chill and drudgery around a stove none too warm with its scanty coals.

Worse than physical hardship, more blighting than cold or ill-treatment, is the inevitable insight of the childish mind into duplicity and vice. A gradual hardening of the sensibilities ensues from constantly hearing words unfit for the ears of youth and witnessing the degrading acts and ugly passions which are too frequent in some work rooms where the sexes indiscriminately mingle. Little beings that should be sheltered by mother's love are early taught the alphabet of sin. They often learn to cheat, deceive, lie and swear. When this sentence was submitted as a reading test: "Do you do all your own sewing?" an innocent-faced lamb thus rendered it: "Do you do all your own swearing?"—oaths being more familiar than industry. So soon as these mites of humanity can manage in the school-room words of one or two syllables, a mercenary parent

may barter their future development for a little silver. The lazy father desirous of living on the earnings of his offspring is deterred neither by human instincts nor human laws. He breaks the law; worse, he makes the child break a higher law, swear to an untruth, and declare itself thirteen or fourteen as legally required when the least observant eye can see that such little bones and wizened face have not struggled to the light during ten neglected years. "Do you wish to know her real age or her factory age?" slips unawares from the mother's lips. As soon as immigrants enter the borders of the United States, the initiation into falsehood begins, to hasten prospective gains from the labor of early youth. "How old are you?" a child was asked. "J'ai douze ans, madame." "How long since you came from Canada?" "La semaine dernière." "And when you left Canada how old were you?" "A Canada, madame, je n'avais que dix ans."

The extent, the economic bearings, and some of the evils of Child-Labor in the United States, may best be shown by an analysis of conditions in those industries where it chiefly prevails.

To study threatening tendencies without favor or prejudice, to search out their causes and warn of their effects surely conduces to suppression or control. A social and economic wrong, however, which strikes at the safety of the home, the family, the future manhood and womanhood of the republic, it is difficult to treat dispassionately. Most writers on Child-Labor insensibly exaggerate without designedly misrepresenting. Reforms are never compassed, they say, by looking on both sides; and in a somewhat warped temper, but longing only to do

good, they cite extreme cases or bolster up sweeping assertions by extracts from the earliest reports of trades-unions, boards of education and labor bureaus,—reports compiled in the first stages of factory legislation when conditions were at their worst and the results of restriction unapparent. In fact, up to the last two years little other information has been accessible. Misled by incomplete statistics rather than disingenuous or blind to improvements chronicled in various States, many eloquent special pleaders would have it believed that, as respects Child-Labor, America is “going to the dogs.” From such conclusions the writer dissents. Though here and there the horizon be dark, the outlook is not discouraging. While the truth should be proclaimed, one fact must constantly be borne in mind—that the wretchedness and abuses which undeniably exist pertain to but a segment of the industrial world. Thousands of kindly employers of high integrity furnish to millions of prosperous and contented men and women the unstinted wage which builds up happy homes. The economic salvation of the majority of those who ply the needle and tend the spindle is more imperiled by the competitive method and their own want of skill and persistence than by the factor of childish toil. Indeed, the better class of manufacturers and proprietors shrink from gains won by the sweating brow of fragile youth. And more: multitudes of untaught children who work, work of their own free will, preferring manual tasks to irksome brain effort. If at home, they would not be at study. What a plea, what an impeachment of the policy of the State is the crowding of willing victims into our shops and mills! An impeachment of school sys-

tems that ignore the productive, the creative faculties; a plea for manual training unhampered by the caprice or narrowness of the individual employer. Valuable educational development without the reproach of childhood's ruin might be wrought from properly regulated juvenile labor; whereas at present it is a crime against humanity, at which statistics hurl serried columns and denunciators their thunder. Affecting possibly one-fourth of the whole industrial body, its turpitude and hurtful consequences must neither be glossed over nor evaded, since without control by the state such evil growth soon spreads. Actual facts fully justify an appeal for the scientific direction of Child-Labor or, in existing phases, for its rigid restraint if not total exclusion.

Most respectable of the occupations which very young boys and girls follow are, perhaps, mercantile pursuits. The surroundings of children employed in dry-goods shops as salesgirls, wrappers, bundle-boys and cash-runners apparently involve no serious or undesirable results. The rooms are tidy, the work light, the garments—however shabby—are generally clean, the air of the little ones indicative of comparative comfort. The greater the comfort the more heinous the wrong. If a widowed mother can afford to keep her child decent, a little extra effort would maintain it at school. Why, then, should parents except as a last resort shut off their offspring from the advantages of education, and decree ten or twelve hours of toil in a crowded apartment, frequently in a damp basement? Even the best shops, from circumstances claimed to be beyond control, often cut off the workers from sunshine and poison them by the mingled contamination of ceaseless gas-

light and odors from ill-kept toilet rooms. The pittance of \$1 to \$2 a week gained by the child goes many times to buy finer clothes for older sisters or rum for an idle parent. Among the foreign population especially, at the earliest age when children can be slipped on any plea into employment, they are taken from school and condemned to shop life in order to swell the aggregate family earnings, to pay off a mortgage on the home or to increase the bank account. A large proportion of houses owned by workingmen represent two or three times as many children robbed of tuition and unnaturally tasked. Well-clad little girls in ruffled aprons often cannot read intelligently words of one syllable, such as *name, age, home*. Most of these toilers confess to having ceased study when in the primary or second reader, and in a few years the last vestige of instruction is forgotten. Hence thousands of boys and girls from fifteen to twenty-one cannot read at all, having been forced to work too young. As time passes the less inclined is the child to make up for lost schooling, shame preventing attendance even if opportunity offers. Its labor thus begun with a view of tiding over some crisis when the father was ill or unemployed, however anxious the parents may be to retrieve the occasion, no day ever comes when the welcome earnings of the helper can be spared, and once in the treadmill the daily round continues.

Sanitary conditions in dry-goods shops which cater to "cheap" trade often violate every law of health. The children engaged there stand or run all day, no seats being allowed. Their scanty lunch is eaten in some cases in underground basements, and the time

allotted for dinner and rest may be shortened to twenty minutes. Obligated to remain at night as late as any other employé, their working hours not infrequently exceed the legal limit; and in States where no safeguards for minors are provided, the length of daily service depends on the whims or rapacity of the proprietors. On Saturday and during busy seasons or just before holidays, night work is added to the already intense strain. From one to three weeks before Christmas the children serve, till 9, 10, 11 o'clock P. M., usually without extra pay; sometimes a light supper is furnished. This protraction of labor involves a scrap of cold bread and tea snatched between whiles—two cold meals of innutritious food for a growing child whose early breakfast was probably hurried and poor, yet who for fourteen hours a day must stand in stuffy air among surging throngs. In the better shops escorts home are provided, but as a rule, released at 10 or 11 P. M., the little ones scurry alone down gruesome byways or thoroughfares alight with sin. Is not father at the grog-shop and mother too tired to act as protector? In groups or singly the girls scud through the darkness, often stopped, insulted or enticed by men. Think of it, parents, who kiss your pampered darlings of nine and ten years in rosy slumber, tucked away at 8 o'clock in the soft, warm bed after a day of romp, wholesome food and wisely managed study! On Sunday mornings the writer has seen at their homes scores of cash-girls and boys heavy-eyed, listless, dragging their tired limbs or asleep in the stupor of exhaustion. Where are the graces, the joys, the innocence of childhood? Haggard, prematurely aged, debased looking faces of

*This is a terrible
description*

the waifs in the poorer dry-goods trade answer—not where Child-Labor reigns. What is the sequel of the misspent years sacrificed to parental avarice or intemperance? Instead of the red cheeks and rounded limbs of healthy youth we behold pallor and glazed eyes, stunted bodies and narrow chests, stooping shoulders, early decay and death, or lifelong invalidism.

The moral atmosphere even of some of the finest shops is none the purest. If clean-hearted on entering, the cash-child is apt to become early familiar with vice. The writer has observed little girls of ten and eleven acting as a go-between in intrigue for older youths and maidens; has heard talk among the small children that revealed a prurient knowledge of immoral practices; and in halls, on stairways and around toilet-rooms, has witnessed improprieties of behavior among girls and boys of tender age that indicate distressing depravity. In cheaper shops presided over by rougher men who naturally attract a lower grade of employes, these evils are emphasized. Now and then the proprietor himself is charged with debauching the smaller girls. While assertions of this character are often false and always difficult to prove, the books of the Society for Prevention of Cruelty to Children record enormities of the most startling nature, and prosecutions occasionally take place. The fatherly attentions of unctuous sexagenarians who pretend to a laudable interest in the little bodies under their control, are known to savor of rakishness. Liberties and privileges that might be allowed an old man are taken with all a young man's enjoyment of them; and such insidious approaches a girl of ten or twelve is too

ignorant or too intimidated to repulse. A home-bred child whose employer was accused of immoralities with two very young girls in his workroom assured the writer that the two victims were "little toughs" forever throwing themselves in the man's way. When questioned as to his behavior to herself, she replied: "Oh, he's always catching hold of me in the hall and inviting me to his office. But the fore-lady says he don't mean right, and I stay away." While one wretch like this may be exposed, a score ply their infamy undetected.

Wherever fines are imposed, the cash child whose pay is smallest bears the largest proportion of the loss. Whatever system prevails in the establishment is applied with more severity to the little one from ten to fourteen than to the clerk of a higher grade so useful that he might not easily be replaced. If the "cash" resents a fine or injustice, a hundred mothers are clamoring outside with eager substitutes for the place. Nobody befriends the small child, hears his excuses, or listens to his grievances. The bundle boy or cash girl is the scape-goat for all sins. In the writer's own experience, mistakes resulting from the gross inattention of sales-women at the counters are glibly charged upon the wrappers or the cash runner. Floor-walkers tyrannize, clerks terrorize. The mite of humanity who was late because she had to run to the grocery for milk or for the reason that her mother failed to get breakfast is "docked" just in the same way as the young lady whose evening revels made her sleep too soundly next morning. From wages of \$1 to \$2.50 a week the sum of five and ten cents a day for being a quarter of an hour behind hand is a very large restitu-

tion for lost time and a heavy percentage from the meagre earnings. In a few shops the fine is a cent for every minute one is late. The cash girl at \$1.20 forfeits for ten minutes' tardiness, one-twelfth of her week's pay; the \$15 saleswoman forgoes but the one-hundred and fiftieth part of hers; yet this is justice! Even at Christmas when crowds are so dense that the clothes of shoppers are almost torn off, the "cash" is in some places fined twenty-five cents for the loss of a badge. Occasionally change dropped in transit through the little weak hands is deducted from the wages. For such accidents dismissal usually follows, though an expert thief among the customers may have been the culprit. ✓

Imprisoned during all the growing years away from sunshine; subjected to the negative evils of cold, weariness, poor food, undue excitement; stunted physically and perhaps degraded morally, the child-worker is either too worldly wise, or else from helplessness and ignorance the victim of imposition. In some States mercantile establishments, being out of the pale of factory inspection, are thronged with children. Apparent comfort in their surroundings repels inquiry, and the wickedness of such child-sacrifice goes unrebuked. The worse the tone of the shop and the lower the pay, the younger are the children who flock there.

In large factories for shirts, overalls and underwear, girls from ten to fourteen are utilized as runners, turners, packers, basters and also as machine operators. Put early even at a power machine, the child not exceptionally strong breaks down in a few years. High speed and nervousness induced by the presence or often by the escape of

steam are no less injurious than the stooping posture and the dragging weight of heavy goods. Errand girls climb stairs incessantly. At noon they buy lunches for the older women, and the order often includes beer. This the child must seek in the neighboring saloon, with whose mysteries she soon grows familiar; the beer itself becomes a welcome treat, and thus the seeds of intemperance are sown. Less exposed in these factories than in retail shops to the demoralizing influences of men, little girls are, however, far from safe. In big buildings let out in floors, unless the discipline is rigid, the boys from one department mingle on stairs and in hallways with the girls from another room, profanity and vulgar jests prevailing.

But the Moloch of little women is the tailor shop. Sent there in vacation at nine or ten years of age to learn the trade, when school opens the child usually prefers work to study and is allowed to remain; or the mother values fifty cents a week above the daughter's future and compels her to stay. The tailor's home is usually a "back shop" high up in attics filled with men and women, the air dense with tobacco smoke, foul from reeking closets common to both sexes and stoves red hot for pressing irons. In such an atmosphere the hours of childhood pass, the little creatures often held to their task by the fear of an angry father who goads their tender strength to the highest productive point. From 7 to 6 o'clock and sometimes in busy seasons until 8 o'clock at night, girls only nine years old baste and stitch in the stuffy room of a tenement, perhaps the kitchen of the tailor's abode. The crying of a baby, frying of meat, smoke of vile pipes, the stench from

unwashed human bodies, dirt and squalor are the background, where a grim, silent "boss" with ever ready curses for a word spoken or a glance straying from work is the *deus ex machina*. A girl now fifteen relates that at thirteen she and younger companions worked with men and boys in a "slop shop" which consisted of a space divided off by a partition six feet high from the back part of the room where the family of her "boss" lived and slept. The opening for egress from front to rear had neither door nor curtain. Here all the workers were compelled to remain on one side of the partition while on the other side the wife of the master brought a child into the world. The men and boys laughed at the moans of the sufferer and made vulgar jokes as the final moment came.

The manufacture of corsets gives employment to many children of tender years, some of the processes, as boning, for example, requiring little skill. Kindred work on dress shields and bustles yields a pittance eagerly sought. Piece work prevails, the supply often gives out, and then only a few cents a day can be earned; yet for the dole of seventy-five or eighty cents a week the child is taken from school and its whole development arrested. The majority of these little damsels are of foreign parentage and manifestly under fourteen, many appearing no older than nine. Numbers have not made their first communion, a ceremony that takes place usually about the twelfth year. From three to thirty tyros may be encountered in every bustle shop; and as conditions are supposed to be more comfortable and factory inspection is consequently rarer in these than in mills; the children sometimes work two or three years be-

fore an age certificate is demanded. By actual test, the majority cannot read words of one syllable; others being aliens speak no English and are illiterate besides. In some shops, the morals are low. The writer has seen at 6 o'clock scores of children from ill-managed corset manufactories behaving on the street like little demons, cursing, throwing sticks and fighting boys.

The veriest pandemonium ever beheld, however, was a hosiery factory in the West where most of the girls were under fifteen and some under thirteen. The din, rudeness, unabashed profanity and depravity made a never-to-be-forgotten scene. It was ascertained from themselves and boastfully related that the employes of this shop spent Sundays at dance halls and theatres and frequented night picnics in couples or with men, remaining out till four in the morning. Into such company young children ten and twelve are launched.

Thousands of girls run knitting-machines, some in well-arranged factories where the workers are better placed than at home, others in poorer quarters. The prices for knit hosiery and similar productions have been so reduced by competition with convict labor that except in the best lines grown women can no longer support themselves. Swarms of diminutive figures stand at the whirring machines ten hours a day for a trifle that would scarcely maintain a well-fed dog. Some of the tiny maids are deeply interesting despite their dirt and rags. The writer was often mistaken for an inspector discharging children under age, and because of this misapprehension had great difficulty in securing a talk with the children. They hid in the

closets and under the stairs, and, when followed, were usually ready with falsehoods as to their real age in order to escape the imagined penalty of dismissal. One brave little girl had courage to tell the truth. Slight and delicate, she looked barely ten, and earned about \$1.50 a week. After answering readily all questions she burst into pitiful weeping, and between her sobs told a sad story, afterwards verified in every particular, of her mother with uncertain employment, three little sisters, aged grandparents, one of them blind, and nobody able to work. "So, as I am twelve, could read very well and had been to school five years, my mother thought I might help her a little. We have been so much better off since I came here. Oh, don't send me away!" In proof of her words she rendered intelligently difficult sentences, and was made happy by the assurance that she should not be dismissed.

To excuse the small wages, children in some knitting factories are for two or three years called learners; but the trade can be acquired in three months, though quickness is gained by practice. The knitters, big and little, often have to pay for broken needles, and in some shops they bear the expense of repairing machines. Most of the workers stand all day, singing while they knit, the pipe of childish voices revealing from the street the nature of the work going on inside the building.

Candy manufacturers employ many children under the age of thirteen and a large contingent are under fifteen. Piece work prevails and in some cities is so poorly paid that older girls avoid the business, often only the forewoman and a few picked assistants being over sixteen. Italians abound in the choco-

late factories, a race beautiful and engaging, but generally untaught. Chewing-gum packers are quite as young, sometimes worse paid and equally illiterate. Some have never been to school since their ninth or tenth year, drifting from shop to shop, working a few weeks in one and another and earning from 75 cents to \$3 a week. All the laborers here except two or three forewomen are usually under fifteen, from thirty to ninety children being employed by each firm. Those of much the same class, sometimes more ignorant and uneducated, are found in scores in most ink and blacking manufactories.

However handsome and well equipped are some paper-box establishments, the rule is that when a house is tumbling down and has become such a wreck that few companies will insure it, the box manufacturer pounces upon the structure and adds to the dirt of years the refuse of his shop day by day until the trash is a foot deep over the unsafe floors. The ceilings are low and begrimed, the light not unfrequently inadequate. Each worker is then provided with an oil-lamp whose smoke and fumes combine with the odors of the glue-pot and neglected water-closets to make the close room more hurtful. Piles of inflammable paper and stacks of boxes await but a spark to kindle a fire that would sweep the building before the dazed inmates could rush to the dark and dangerous stairs, only to find the way barred by packing-cases. In such death-traps thousands of children labor. The lame and humpbacked choose box-making as light work permitting them to sit. Their distorted figures and pain-marked features stand out sadly in the dim light behind long tables piled grotesquely with box-shapes. So few blooming

cheeks and bright eyes, such wan visages, so much deformity, so many little waifs with hard and sin-stamped faces, so much dirt, so many rags, that one might fancy a demon, sweeping over the slums of a great city, had snatched up all the small, the ill, the weak, the wretched, and set them against this shadowed background at unending toil.

Even the printing-press is no guarantee of just economic conditions, since into the book-making art abuses creep.

Dishonest binders on pretence of teaching young children the trade, make them work two, four, eight, even thirteen weeks without pay; and the "learners" receive but a pittance for the succeeding half year. This practice has no connection with apprenticeships. When the parents insist on fairer wages the children are all discharged and a new group is engaged, deceived by specious promises and defrauded as long as they in turn will submit. Flourishing establishments could be mentioned, built up in this way. The employer knows the children to be under factory age and uses this fact to silence the demand for proper remuneration. Professing to favor the family by permitting the little ones to work, he in reality grows rich from their unrewarded toil.

The condition of juvenile laborers in pencil factories and establishments where frames for umbrellas and pocket-books are made, or other metal work is done, is sometimes neglected. In the pencil manufactories the task is light and the pay fair. The moral tone in one of the largest of these is so low, however, that a respectable child soon desires to leave because of the vile language used. Girls apparently of eleven and twelve have been seen as they emerge

from the shop to attack each other on the street, to swear like troopers and to enter rum saloons unabashed. In such employments as making tinware, buttons, frames for umbrellas or satchels, children tending presses and cutters are not unfrequently hurt by machinery insufficiently guarded. Almost every worker in such industries has the end or joint of a finger cut off or the whole hand mutilated. In dress-steel or corset-steel shops the violation of law is often flagrant and wages are small. Hundreds of young girls have testified that they began work in these factories at nine and ten years of age and in many large cities scores of children of pitiable appearance toil there. One manufacturer in Brooklyn refusing access to his establishment, a search on Sunday in the surrounding tenements revealed many of his employes ranging from ten to thirteen years old, who volunteered a sad story of ill-treatment and low pay. Another notorious concern in New York is lodged in a rookery unsafe to life and limb. At the noon hour around the sink were children obviously under twelve; and the State inspector soon after sent home nearly thirty girls below the legal age. In still another shop of equally unenviable fame, the children were so intimidated by foreman and employer that no true answer as to age could be obtained. Fully a third of the seventy or eighty at work were evidently too young to be lawfully employed.

In type foundries and toy manufactories the danger that besets the little toilers is insidious—nothing less than lead poisoning. The pallor of many wretched creatures tells its own tale. Engaged on that portion of the work which is most injurious,

rubbing type, the children continually breathe the lead dust. Some suffer acutely from painter's colic; others fade, growing weaker and weaker; others have sharp attacks which pass and permit them to resume their task; all are injured, though perhaps not manifestly. Varying with the size of the type foundry, from three to twenty little ones are on the pay-roll. This unskilled labor is also utilized in painting toys and tins, the same dread effects ensuing.

Packing houses where oysters, vegetables and fruit are canned, use Child-Labor largely. From the perishable nature of the commodities hands are wanted on the instant and whole families respond, even the infant of two weeks lying beside its mother while she works. Around Baltimore, for example, babies of three and four years of age shell peas and pick strawberries, their pay being "lumped" with the mother's. In one household were four workers ranging from three to eight years old. School children seek employment at packing in vacation, and during May, June and October they abandon study in order to can fruit. While the season lasts the hours are painfully long. Not uncommonly a woman comes to work at four in the morning and remains till eight at night, her brood beside her in cramped positions without change or motion, breathing the air exhaled by six hundred pairs of lungs, and the emanations of as many bodies unused to soap and water. Indescribable is the assemblage; every tongue is heard; oaths in all languages resound, and tobacco adds its poison. Women of eighty, yellow, tottering and emaciated are carried there and propped against the wall; babies scream, hungry and tired children

fret. At least one-fifth of these workers are less than twelve years old; and the occupation being intermittent, the gain is often small.

Microscopic wages of the seamstress in tenements are partly due to one form of Child-Labor—that of the infant who from the age of four or five sews on buttons or pulls out bastings, or turns seams, or makes passementerie to assist its goaded mother. The woman with two or three helpers under ten years old works cheaper than her solitary competitor; and the attics and basements of all large cities hide away hundreds of puny frames and benumbed intellects stultified by ceaseless toil. One Sunday in a Mott street tenement five children under twelve were found making cheap neckties during ten hours a day to aid the eldest sister; and little boys of five years old have been seen sewing buttons on “slop shop” trousers. The crooked bodies and mental weaknesses of the offspring of the poor are, reputable physicians assert, directly traceable to such unsuitable tasks and the life-long deprivation of air and sunshine.

The healthiest adult continuously employed at tobacco suffers from its poison. In time every fibre of the frame becomes affected; extreme nervousness is induced and lasting maladies like St. Vitus Dance supervene. Physical weaknesses are increased, incipient ailments develop. Digestion is disordered, heart action impaired, strength sapped; the mind is excited, often the passions are inflamed and the moral sense deadened. While a large body of virtuous, intelligent and respectable men and women make a good living by the tobacco industry, it cannot be denied that wretched conditions often converge there.

In the vitiated atmosphere of factories shut tight against air or moisture, heated by steam to the excessive temperature demanded by some processes of manufacture, the room reeking with human breath and the air dense with the dust of the plant, thousands of young children are seething. To a strong man unaccustomed to such surroundings the temperature is trying. Drenched with perspiration, he sneezes, coughs, stifles from the impalpable brown powder that pervades hair and raiment, irritates throat and nostrils, makes the eyes smart, the lips burn and sets every nerve a-quiver. Yet here sit the workers all day on a low hard bench without a back, or else flat on the filthy floor. The quarters where tobacco is stripped from the stem are sometimes located in a damp basement, musty with mould or lurking miasma; sometimes in lofts on which the sun beats unsparingly, sometimes in spacious, tightly closed rooms furnished either with benches along the walls or "pens" thickly placed about the floor. These pens are just what the name imports—spaces from four to six feet square boarded off by partitions varying in height. Within each pen are a low bench, a pile of tobacco leaves, and from one to three workers. Sisters may be "partners," or an old woman and a young child, or a mother and two little ones, often a boy and girl alone together. The indignity of being penned off like cattle is not diminished by the presence of overseers, who, while sometimes intelligent and kind, are as often ignorant, tyrannical, profane. The mere sight of these dirty, brutal creatures ordering the daily lives of helpless women and young children kindles disgust and indignation.

The rules of the factories where so many small beings congregate vary from the utmost severity to complete and pernicious freedom. As to air, ventilation, comforts, the larger establishments range through every degree of badness to excellent accommodations—from disused warehouses out of repair to handsome structures built expressly for the manufacture, fitted with conveniences and mitigating the inevitable drawbacks to the trade. The latter edifices are usually provided with good dressing-rooms and sometimes a lunch room apart, broad stairways and fire escapes, plenty of windows seldom raised, and as an especial luxury chairs with backs. No such praise can be ascribed to tobacco factories in the more crowded quarters: dens devoted to this purpose because unfit for other use. True, the occupants reside perhaps in a hovel, and their rags expose the filthier skins of creatures no longer sensible of shame. The poison of the weed and the degrading conditions in the poorer work-rooms invite a class excluded from respectable places—besotted hags trembling on the brink of an unholy grave, debauched women, hardened and hungry, children from the street, offspring of crime, homeless and friendless if not already vile. This type of the working girl represents the lowest ebb of fortune, womanhood brutalized and revolting, childhood stamped with hereditary sin and disease, bereft of decency, without restraint. Even into the better factories a few such outcasts slip, and moral plague-spots they are, however disguised under genteel garb or repressed by decorous rules. The dilapidated mendicant telling a piteous tale of woe, employed out of charity may

demoralize every young girl within reach. So is smirched the spiritual cleanness of the little toilers—sometimes strikingly beautiful and, strange contradiction! to the end unspotted from the world—who throng the tobacco, cigarette and cigar factories as “helpers” to mother, grandmother and sister, their names not appearing on the books, their earnings swelling the elder’s fund. Exposed to the evils of nicotine absorbed at every pore, innocent creatures from seven to twelve years of age also risk the worse misfortune of moral contamination. From these surroundings the little ones drift to other tobacco factories where pay is higher and regulations are more respectable; but so hardened, perhaps, is their moral cuticle that no prudish scruples can be expected of the comely maiden of seventeen who at ten years old was versed in every form of vice.

In some of the rooms of tobacco centres where the leaf is stripped from the stem are constantly employed young children whose work counts for the older person responsible for their presence. Many of these unfortunates are from seven to nine years old, and labor during the full factory hours. Certain overseers connive at the practice and if questioned glibly declare that the children are there only “for the morning;” yet the yearly earnings of the adult they accompany are more than one hand could make. The many infantile figures grouped about give to some stripping rooms the appearance of day nurseries, notably in those factories where colored women are employed.

Sallow faces, skin begrimed with tobacco dust, hair matted, garments stained—these are the sign manual of the average tobacco stripper. The chil-

dren wear their saturated garments into the street, covered by that pathetic badge of thriftless poverty, a blanket shawl, telling its tale of rags and penury, better raiment sent to pawn, drink absorbing the last nickel. The little ones carry all the filth of the day's occupation into their home, into their bed even, for they generally sleep in the clothes worn at work. By night as by day the same fumes are breathed, and if the child lives to maturity, at thirty she is a broken down, nervous, diseased old woman. The extent of this exposure of childhood to injurious toil may be imagined when it is remembered that, except in the dry goods and textile industries, more workers from seven to fourteen years of age are employed at tobacco than in any other pursuit. In many localities over thirty-seven per cent. of the wage earners are young children, girls being more numerous than boys.

Since the physical organization of the female is of greater delicacy and more easily affected by unfavorable environment, the stronger is the likelihood that the shattered constitution of the girl-worker will bequeath to generations yet unborn the scourge of inherited blood poison and the moral curse of racial depravity.

Of the facts about cigar-making as carried on in some tenement houses the public has but faint idea. The background of the worst tenement-house practices cannot in common decency be plainly represented. A block seething with human life, four, five, six and eight floors in each house; a second building rearing its squalid front behind the first and a third behind the second; from eight to fifty families in one dwelling, from six to sixteen persons in each family; about two hundred souls herded into a space 14x40

feet, five stories and more, toppling skyward. Steep, often winding stairs in absolute darkness; sinks and closets contaminating the air at every landing; bedrooms 8x8 feet—mere dark cuddies, with only a square hole opening upon the black, unventilated halls, and each cuddy slept in by from two to eight persons, irrespective of sex. The kitchen is the living, eating, washing, cooking, sleeping and working-room, where dirty children, cats and dogs disport. Here is brought tobacco for the whole household to work up, and every family in the huge structure must engage in this occupation or be turned out of their home. Parents and older sons and daughters roll cigars while the younger prepare the weed, even the school children being compelled to work in the afternoons and far into the night. Pale and feeble little souls of six and seven strip the stems during hot summer days. The writer beheld a baby girl of five years seated on a dirty lounge strewn with tobacco leaves from which she was made to tear out the midrib, the parents working at a table beside her. In other tenements infants crawl in leaves scattered over the floor to dry, playing with and sucking them. Tobacco is spread out in bedrooms, on the soiled bed itself, on the kitchen table. Children delve in it, roll in it, sleep beside it. The dust seasons their food and befouls the water they drink, and the hands of the mother are seldom washed when she leaves the cigar table to prepare meals or nurse her babe. In the cellar of the building the discarded stems rot, breeding pestilent vapors. Day after day, year after year, children are born into this poisoned air, take it in with mother's milk, wilt and die in it, or live through puny, wailing infancy into

abnormal childhood, predestined to nervous excitation, disease and depravity.

In the workshops of the North and West, especially in the tobacco industry, the child is confronted with the temptation to use beer and other intoxicants. Errand-boys and girls who bring lunches and beer therewith are always rewarded with a share, and the writer has seen children despatched to the beer saloon at all hours, a glass foaming before more than half the wage-earners. In a soap factory in Ohio where girls of sixteen and younger form the greater part of the employés, the proprietor expressed the gravest fears as to the future of his workers from the fact of excessive beer drinking. Though it was forbidden in the workroom, many girls frequented the nearest beer saloon and nearly half their wages were spent for this indulgence.

Three-fourths of the woolen yarn manufactured for trade and a large percentage of the yarns spun for conversion into cloth is made by children under sixteen. The yarn mills about Philadelphia alone employ thousands of juveniles, many being obviously below the legal age for admission. Little spinners have spent their whole lives in the spinning-rooms, accompanying their elders on pretence that no one was at home to care for them, and working all day to the extent of their feeble powers, but smuggled away when the employer passes. The youth and immaturity of those who declare themselves eligible for employment give the lie frequently to sworn statements. The writer has often met little girls in the factories who still talk baby talk, yet their hours of labor are as long as for the stoutest adult. The Saturday involves beginning work at 6

or 6.30 A. M., and mothers admit that their children must be pulled out of bed in the morning. Eye witnesses in Rhode Island recently told the writer that tender creatures of nine and ten are dragged to the gates actually asleep, falling if unsupported, and in this condition are thrust into the mill to begin eleven or twelve hours' toil. Crowell, in the *Andover Review*, July, 1885, makes substantially the same statement. Even in enlightened Boston, the largest of its great cordage factories lately worked overtime for months, employing meanwhile children under legal age.

The use of Child-Labor in the Southern mills will be discussed in connection with a review of labor laws of the individual States.

Is the sanitation of the factory better than that of the tenement homes of many workers? An affirmative answer is scant praise for factory conditions, inasmuch as farther than in most tenements disregard of sanitary measures cannot go. But the employer who gathers under one roof throngs of men, women and children to toil for hire, reserves that control of his premises which, to a certain extent, landlords resign. Provision for the comfort and health of employes devolves then on him; a provision which he sometimes faithfully makes, oftener neglects, too frequently shirks altogether. Grant that many mills and shops present cleaner and in every way better quarters than the earners ever saw before, where their health and habits improve. Responsibility is not thus, by the good deeds of some exploiters of labor, vicariously shifted from the niggards who refuse the common decencies of life, or from that other large class who have "never thought

about" giving separate toilet facilities to the sexes. Where Child-Labor is utilized the shops are rarely properly equipped; and as it is not uncommon to find a score of little beings of both sexes thrust off alone under a stripling of seventeen or eighteen years, without the restraining presence of any woman or other adult, the risk to youthful morals is as serious as the inroads made on health by the prevailing neglect. Through filthy practices of the lowest immigrant population and want of care even among operatives of the better class, the water-closets in more than half the work-rooms are, if not disgusting, at least offensive and unsanitary; and the number provided is inadequate.

Structures on which hundreds of thousands of dollars have been expended are grossly defective as to drainage, closets and sinks. Mills otherwise models as to management emit from their tower toilets sickening odors. In scores of large shops which the writer has visited, it is scarcely exaggerated to say of the stench from the closets, that "it almost knocked one down." Smaller, more crowded work-rooms sin quite as frequently, presenting besides conditions fatal to modesty. Closets for the two sexes generally adjoin with but a thin partition between, or the one box-like affair is used indiscriminately by males and females. It is unusual to find these conveniences placed away from the working quarters, or screened in any manner, and a single one must often suffice for a hundred men and women. In some buildings the retiring-rooms disfigure the landings and the odors penetrate the whole edifice; again, the cellar or basement becomes almost a cess-pool. Hand in hand with the criminal negligence of

employers goes the almost equally criminal indifference of the workers who, from fear and ignorance as well, seldom complain to the health authorities.

In textile mills and tobacco shops the temperature is very high, and the children employed there work in many States eleven and twelve hours a day, with the mercury ranging over 100° all the year round. Windows are tightly closed and oils and dyes add their fumes to the heavy atmosphere. In many shops red-hot stoves roast those near by, while on the outer circle of workers blow icy draughts from open hatchways. From the all but universal overheated room the operatives go too thinly clad, perhaps, into the piercing cold without.

Exposed to such bad air and other noxious influences, young, delicate, underfed boys and girls spend ten to twelve hours daily. Is it any marvel that they succumb to every ailment? Weaker, whiter, thinner they grow; the little throat is tied up in soiled flannel, the cough is tighter, or the blood-poison breaks out in sores. On some cold morning a slim figure is absent from its wonted perch. "How we do miss Maggie! Sure, that young one was light on her feet!" the stitchers say, remembering the errands she ran for them, the stairs she climbed. Another day and the forewoman, grave but with suppressed importance, hands round a hat into which the dimes and quarters rain to pay for an humble burial. Poor Maggie is dead!

So, in this utilitarian age, is the cry of the weak and helpless too often drowned by the loud demands of the strong. The heathen and benighted are at our door, employed at tasks which are "grinding down life from its mark." Homes are empty,

families are disintegrated, education is rejected, physical deterioration of the race is going on, manhood and womanhood are degenerating and poverty tends to grow more widespread and extreme, as an outcome of the abuse for mammon's sake of nature's laws of development and healthful living.

The census of 1880 showed that in ten years the number of children at work had increased fifty-eight per cent., while the number of adult males employed increased twenty-four per cent. Of 9,472,159 who work for wages in productive industries, 1,118,356, or 11.8 per cent. are under fifteen years old. By the Massachusetts census of 1885, the whole number of children under fifteen at work in 1875 was 13,265. In 1885, the whole number under fourteen at work was 3,040, 1,907 being males and 1,133 females, including 11 under ten years of age. The number at work in 1876 without twenty weeks' school attendance constituted 64.95 per cent. of all the children at work, while in 1885 they only constitute 46.02 per cent. of all the children at work, a gain of 18.93 per cent. for education. The factory laws of Massachusetts having been in operation longer and more rigidly enforced than are the enactments of any other State, it would be indeed disappointing if despite such safeguards the evil has increased which these laws were framed especially to abate. In the Fall River district, September, 1887, 261 children between the ages of twelve and fourteen were employed, and 1,659 between fourteen and sixteen, with probability of enlarging the number under fourteen by those completing the amount of compulsory school attendance. One inspector mentions that in January the number under fourteen in his

district was about 300, the number between fourteen and sixteen about 950; but in October there were only 200 under fourteen, and 1,000 under sixteen, a gratifying recognition of the statutes. The law requiring minors to read and write English has swelled the attendance at evening schools. More than one inspector complains of the frequent violation of the regulations by a young child presenting the certificate of an older one, or by the issuing of certificates on the statement of parents without seeing the applicants. In 1888 Fall River employed less than one per cent. of mill operatives under fourteen, and 4.8 per cent. between fourteen and sixteen, or 5.5 per cent. under sixteen. New Bedford had 2.1 per cent. under fourteen, 4.6 per cent. between fourteen and sixteen, or 6.7 per cent. under sixteen. Personal researches, however, and the corroboration of well-informed observers, indicate that these figures from the report of the Chief Factory Inspector are optimistic. Children were probably hidden out or smuggled away, or otherwise escaped the lynx-eyed detectives. George Gunton says: "I have myself known parents who actually changed the ages of all their children in the register of their family Bible, dating their births uniformly two years earlier in order to evade the law and get their children into the mill two years earlier." This corresponds with the writer's experience in scores of families where the fraud was patent. The father and mother of eight children deliberately and collusively falsified the ages of six in order that the two youngest might appear within the legal limit. One slight, diminutive creature declared to be sixteen was, in her short frocks, knee pantalettes and baby aprons,

an absurd refutation of the statement. The writer has overheard groups of children in Massachusetts trading in certificates, and, guided by one who could read, conferring as to what girl or boy would best suit the description therein required of the rightful owner—"blue eyes, light hair," or "dark eyes, black hair."

The very fact of these plots and precautions, however much it makes for infant depravity, proves that strictness in administering the statutes bars thousands from work who might otherwise be sacrificed in a temporary crisis or to parental greed. Despite the care of the authorities, all nationalities force their offspring prematurely into mills and shops. From personal knowledge of the circumstances of families so sinning, the writer attests that the martyrdom of youth is often unnecessary and results only in extravagance at home, or laziness and intemperance on the part of the child's natural guardians. Some of the unemployed are from preference unemployed—a floating, degenerate manhood—sinking so low as to shirk making a livelihood, and overburdened even by carrying to the work-rooms the dinner-pails of the toiling children. The increased stringency of the factory laws is positive evidence of their violation. Parents still borrow and trade in certificates; the older sister or brother gives them to the younger; Canadians returning home sell them to those who remain. French Canadian children being all of much the same type of features and coloring, among that nationality the trick is harder to detect. Those who are ill or have found another task turn over the certificates to their family successor or neighbor, and the overseer, though suspicious, not under-

standing their language, cannot prove the imposture. The overseers state that they have repeatedly discharged children from the mill to go to school, and in a week's time have heard of them employed in another mill, duly armed with certificates from parochial schools. On the borders of the States children from Massachusetts work under age in Rhode Island, and children from Rhode Island work unbuked in Massachusetts.

Compulsory school attendance in Rhode Island now covers twelve weeks, yet thousands of children of legal age do not attend school a single day. The truant law, says the last Report of the Board of Education, is not enforced, the negligence of parents and the selfishness and indifference of employers resulting in its being in many places utterly disregarded. The officers are restricted in the honest discharge of their duty. Appointed by the party in power, they serve or cater to the interest of friends. In many towns their compensation is insufficient and they become employers of those very children whom they are sworn to send to school. By the Rhode Island census of 1885, seventy-two children from seven to nine years old worked in three occupations, sixty-three being in manufacturing establishments when the census was actually taken, and kept out of school in order to work. In eight occupations, 7,938 children from ten to fifteen years of age labored, of whom 5,367 were of native born fathers and 2,572 of foreign born fathers. The whole number of children employed was about 8,000, whereas the whole number of gainful workers in manufacturing, mechanical and mining industries was 71,883. Over eleven per cent of the working

population were under fifteen. Of 3,527 absentees of the employed class returned in the census as deprived of school privileges, eighty-five per cent. were of foreign born fathers, and fifteen per cent. of native born fathers.

The factory and school laws of New Hampshire combine to secure its juveniles immunity from labor till elementary education is assured. Despite the honorable co-operation of many New England manufacturers with such legislation, evasions and violations are common in New Hampshire as elsewhere. Youngsters from twelve to sixteen work the year round in the face of school requirements, and a large proportion, according to the unguarded statements of their mothers, can neither read nor write. The Irish are as prone as the French Canadians to enslave the child to toil, and as glib in overstating its age. Both nationalities patronize parochial schools where sometimes the English language is not taught, and from which certificates are more readily obtained by nominal attendance than in public schools under State supervision. In vacation, too, pupils under the legal age drudge at the expense of needed rest and play; and a good job thus secured prevents return to study. Intelligent and humane overseers forbid this wrong, but some overseers are neither intelligent nor humane, and others yield to the coaxings of valuable adult operatives who make their own continuance dependent on the employment of their children as "small help."

By the Report of the Commissioner of Labor for Maine, 1888, the percentage in cotton mills of children under fifteen is 3.7 per cent; in all industries, 2.5 per cent. Minors from fifteen to sixteen consti-

tute nearly five per cent. of all operatives, minors under sixteen are seven per cent. of all employed. In sister cities, however, where two large cotton corporations aim to retain no minors under sixteen, among six out of thirty families visited by the writer, children from twelve to fifteen years of age are working in the mills, some without ceasing for the sixteen weeks' school attendance which is obligatory in the State. The mothers being prolific, heirs succeed each other rapidly, and in one family with two adult workers, sons sixteen, fourteen and twelve are operatives, the boy twelve having already worked two years. In this household three children, eleven, nine and seven years of age attend no school. In another city there is a typical case, a suspicious gap occurring between the girl nine and the youngest worker thirteen, whose appearance and that of his three elders justifies the conclusion that the age of these wage-earners has been set forward at least two years. The girl said to be sixteen weaves, the boy fifteen tends railway heads, a sister fourteen spins, and the thirteen-year-old is a "roping boy," all having been steadily employed for the past twelve months. In another family, besides the father and three older operatives there are engaged without intermission in the mills a son sixteen and daughters fifteen and fourteen, each suspiciously childish looking and all illiterate, the parents hoarding the earnings of untaught offspring. Yet the State wisely but often vainly ordains that "except during vacation no child under fifteen shall be employed unless during the year next preceding he has attended school sixteen weeks; and no such employment shall continue unless such child in each and every year

attends some public or private school for at least sixteen weeks."

The report of one inspector to the Board of Education of Connecticut, April 1889, shows 1,341 instances of absence from school and 145 children illegally at work. Such violations of law on the part of employers are due to a "carelessness clearly criminal." In answer to the query "Are there cases of hardship to individuals or families?" (from the operation of the Child-Labor law), and "Is the limit, viz., thirteen years, too high?" the proprietors promptly said "No;" at the same time they hire children under age because "the families to which these children belonged were poor and needy." Yet the employer receives full compensation in the services of the minor for all wages paid, while the child is being robbed of the opportunity for education. Similarly persons who take children from asylums, county farms and reformatories and make them work, often neglect to give them tuition. The real motive appears in the reply of these sham philanthropists when told that the law requires schooling for the little ones: "If we have to send the child to school we cannot afford to keep him."

In fifty towns and 157 establishments in Connecticut, by the same report, there were engaged 471 children between thirteen and fourteen, and ninety-four in violation of the law. Forty-one children under thirteen were employed illegally. When the misfortune or shiftlessness of parents has resulted in poverty, the burden falls upon young children. Not infrequently large numbers of the industrial community would be hopelessly in debt except for this resource. When the barest margin on which

life can be supported for a family of six or seven people is \$400 a year, and the father earns but \$300 or less annually, the difference must be made up by pressing the child of poverty into the lists of competition. The State allows the children of its working citizens to be deprived of privileges enforced upon the heirs of the richer classes.

In the iron and steel industries, between 1870 and 1880, the employment of boys increased from 2,400 to 7,700, or 216 per cent., while employes over sixteen increased seventy-eight per cent. The relative rate of increase for Child-Labor as compared with that of men and women in manufactures and mechanical occupations was for Illinois, 177 per cent.; Maine, 164 per cent.; Maryland, 160 per cent.; Iowa, 127 per cent.; Ohio, 116 per cent. The census of 1880 shows that 10,000 children under fifteen are among the 65,000 textile employes of Pennsylvania. In the eastern part of the state, says a competent authority, villages built up by the tobacco trade are in shocking sanitary condition; and the numerous young children employed are without mental or moral training. Girls and boys of thirteen years are in the habit of visiting liquor saloons after work hours. Intoxication is no rarity among the girls even, and one of fourteen years was known to have had a species of delirium tremens. In 1882, in the anthracite coal regions of Pennsylvania, 24,000 of 87,000 employes were boys, and 4,115 were only fifteen or less.

The report of the Inspector of Factories for Ohio, 1889, is less detailed than that for Massachusetts, the division of employes being simply into males, females and minors, giving no clue to the age of

the minors. In the summary we find that 396 "changes" were ordered as to employing minors under twelve. Since each order represents probably from two to twenty children less than twelve years of age, it is evident that Child-Labor is not discontinued in Ohio. The inspector remarks: "If the evils and extent of the employment of children were not so glaringly outrageous and far reaching, it would seem that twelve years was a ridiculously low age to set at which children might be legally employed in factories and workshops. But the fact that the age was made twelve was adequate proof that many younger than that were employed, and their employment had become a disgrace to the State, and injurious to its future citizens." The causes, he thinks, for the prevalence of the evil are, first, the plea of poverty or need on the part of parents working upon the employer's sympathies, and second, the competitive system of doing business, which compels a manufacturer to resort to the same nefarious methods as his rival. He points out that since the productive energies of the world have been enhanced a hundred fold, children should have greater intellectual advantages; yet every machine is constructed with a view to lessening the number of adults and increasing the number of juveniles in the industrial market.

The letting of pauper children to the English manufacturers to be herded together, goaded, starved, and worked sixteen hours a day, was stopped by the intervention of Lord Ashley. In our own day and country the Ohio Inspector reports a hundred boys contracted for from St. John's Orphan Asylum, **Br** **manufacturers of Findlay and**

Fostoria. Striplings of twelve, delicate and dwarfed, were boarded in frame buildings close to the manufactory, working in two shifts from 7 to 12 A. M. and 5 till 10 at night. Food and lodging were furnished for the first six months, and for the next six months \$1 a week additional was given. The children had neither schooling nor apprenticeship, but, helpless and of tender years, were actually purchased with gold and enthralled in "pens of bondage for the waifs of the world."

The report for 1888 of the Factory Inspector for New York State admits the impossibility of preventing false affidavits being made to evade the regulations protecting children from premature labor. Sometimes real want, oftener the ignorance and cupidity of parents, aided and encouraged by grasping employers and perhaps by a notary without regard for his oath of office, are responsible for foisting child workers upon the world. Unscrupulous proprietors bluntly say that they do not care how young a child is so long as the parent is willing to swear to its being thirteen, and thus relieve the employer of responsibility. Attention is called to the fact that Child-Labor, following on the adoption of machinery, has prevented mankind from obtaining the full benefit of labor-saving inventions.

In many establishments in New York City children only are confessedly employed. One bustle-spring maker, the report shows, has four males and forty-two females, three of the males and forty-one of the females being under sixteen. In a pencil manufactory half the females are minors, and 21.5 per cent. are under sixteen. In a flax mill again, half are under twenty-one and over 12.7 per cent. are less

than sixteen. A prominent silk factory employs 23.5 per cent. of labor under sixteen years of age. In one of the best managed and best arranged candy factories in New York 73.6 per cent. of the employés are under twenty-one and forty-seven per cent. are under sixteen. Such statements may be indefinitely multiplied from the thousands of establishments in New York City mentioned by name in the report. Until recently the bulk of the inspection there has rested on a single official, and as one consequence of this inadequate force, young children, and girls oftener than boys, are, whenever possible, crowded at low wages into pursuits formerly the resource and mainstay of adult laborers.

Between 1870 and 1880 the increase in the employment of children in New Jersey was one hundred per cent., whereas adult male labor increased forty per cent. By the Report of the Inspector for New Jersey, 1888, one firm making worsted goods is credited with one hundred employés, fifty of whom are under sixteen years; another employs thirty-three per cent. and another forty per cent. of labor under sixteen years of age. The silk mills use from twenty per cent. to forty-eight per cent. of children under sixteen. In a shoe factory with twenty-one employés, ten are under sixteen; in a brick and tile company, over twenty-eight per cent.; in a cracker factory, sixty per cent., and as many in a manufactory of brass frames; in a button-hook factory, fifty-one per cent.; in a braid mill, thirty-three per cent., and in canned goods factories, thirty-five per cent. In one glass manufactory twenty-seven per cent. of the operatives are boys under sixteen; in two others, thirty-four and thirty-seven per cent.;

in a glass shade factory, thirty-three per cent.; in glass bottle factories, forty-three to forty-four per cent.; in glass tube works, eighty-seven per cent. The flax mills employ from fifteen to twenty per cent. of operatives under sixteen. The inspectors report 136 children discharged—seventy-eight girls under fourteen, fifty-eight boys under twelve.

Few of the Labor Bureaus of the Western States have made any investigation as to Child-Labor. Missouri is now going somewhat into the subject, backed by factory laws which are good so far as they reach, but frequently ignored and in some localities a dead letter. The indifference in the West to this growing evil is matter of remark and regret; and to students of social abuses it is exasperating to find the pages that might contain pregnant facts relating to human lives devoted to statistics concerning turkeys and geese. The Commissioner for Wisconsin furnishes few data as to Child-Labor except tables on apprenticeship, which show that trades are entered much earlier than formerly. The weight of testimony indicates that apprentices are taken mainly for profit and receive but desultory instruction. In tinware, candy factories, wood-work, brick-yards and other industries, child-labor is declared to be employed; but no definite figures are given.

In Illinois, 13,500 or nine per cent. of all employés are said to be children. In the tobacco industry, 500 or thirty-seven per cent. of the whole are children; also ten per cent. of employés in lumber and woodenware industries; and girls work in tile and brick-yards. The Report of the Bureau of Labor for 1886 exposed a system of fines prevailing in the principal trades of Chicago and other localities, that bears especially

hard upon the juvenile workers. The Department of Health of Chicago protests against "the immoral and degrading influences of mingling the sexes (in the workrooms), thereby preparing many of them (the children) for lives of shame, misery and possible penal servitude." The practice is also censured of presenting certificates in which the age of the child is without doubt falsely represented.

The Commissioner of Labor for California found the law shamefully violated "which prohibits telegraph and telephone companies from sending minors to houses of ill-fame." Many telegraph messenger boys were delivering messages and running errands for people of questionable repute; bringing meals to their rooms; going to an opium joint and purchasing opium; being sent to whiskey mills for liquor, to cigar stores for tobacco; and even hired "to allure victims to those dens of iniquity by delivering letters of assignation." The manager or superintendent of one of the telegraph companies was arrested for violation of law, and after some litigation, that section of the penal code is now enforced.

Of the former slave-holding States Louisiana and Maryland have elaborate factory laws and Georgia has just placed upon her statute-books a provision tending to shorten the hours of cotton-mill operatives. In Louisiana the employment of boys under twelve and girls under fourteen in factory, warehouse or work-shop is prohibited, and no child under fourteen is allowed to labor in the aforesaid or dressmaking or millinery establishments unless it shall have had four months' schooling in the year next preceding. The poor little dressmaker's drudges

are thus for the first time protected. The superintendent of police is charged with the enforcement of the act; and the law having recently gone into effect with all the thoroughness of a new broom, comparatively few children were found working in the New Orleans factories in March, 1887.

Kentucky has no efficient protection for its juveniles. In the tobacco industry girls of nine years and illiterate are sometimes seen, and many young children work who are not recognized on the pay rolls, but are said to be merely "helping" the mother, though imprisoned as effectually as if bound by contract for service and wages. The ignorance and absence of attempt at education are in many instances lamentable; indeed, the illiterate earners thirteen and fourteen years old proceed from families often in comfortable circumstances and owning their home.

Virginia¹, the Carolinas, Alabama and Tennessee throw over the toiling children in their mills not even the shadow of a protective law. In Georgia, while the working hours for cotton and woolen manufactories alone have very lately been equalized, and in country districts curtailed, all measures looking to the dismissal from factories of the hundreds of quite young children who plod through eleven and twelve hours dreary confinement are from various causes defeated. The chief obstacle to such reform has been that a clause materially shortening the hours of labor in factories was hitherto tacked on to the original bill. In the legislative session of two years ago, a bill prohibiting the employment of children under ten years old failed to

¹The legislature of Virginia has passed a Child-Labor bill and the governor has signed it.

pass—a significant commentary on the tender age of many workers. Yet, within fifteen minutes walk of the capitol, in two large cotton mills, delved fully one hundred pale, dwarfed, goblin-like, infantile creatures, without a ray of learning and every gleam of intelligence fast being extinguished by drudgery—children trebly weakened by descent from mothers and grandmothers whose strength and youth were ground out by the same remorseless machinery in a life-time of similar toil. Beings they are with white skins, but more unlettered than the African; with precious minds and souls unawakened by a touch of ambition or spirituality, brutalized under the fierce spell of money-makers, who are enchanters as deadly as Circe. Some of the little girls are so young that their speech is a baby lisp—dragging life's burden under goad and spur, while still in body, intellect and utterance they are veritable infants, who ought to be mothered and petted. Lord Shaftesbury's careful measurements proved that in the British Isles children in mills walked or trotted twenty-five to thirty miles a day. Although the working hours in New England are now less than when those facts were presented, conditions in many Southern and Western factories offer a parallel, the increased speed of improved machinery adding to the disadvantages of the "cracker" or "hoosier" operative. The little one is awakened at early dawn and stands all day. In the country mills of some States the hours are still inexcusably long, oftener fourteen and fifteen than the present Georgia limit, eleven. Even during ordinary working time of sixty-six hours a week, the Saturday half holiday throws twelve or thirteen hours into five consecutive days; and the making up

of lost time, not exceeding ten days, involves continuous strain.

The fact that strikes seldom occur and few complaints are heard does not argue that no abuses exist. In an isolated community they remain unchallenged from ignorance, long sufferance and hopelessness of effecting beneficent change. Under just such conditions, in truth, the largest number of helpless children are sacrificed. At one country mill a combined grocery and liquor shop is the only structure except the tenements. On its shackling porch at 10 o'clock one bright winter morning lounged twelve able-bodied men, whittling sticks, squirting tobacco juice and gossiping; while five others, with their hands in their pockets, surrounded one butcher's cart. In the neighboring factory, deafened by the whirr of machinery, stifled by heat and dust, stunted in body and torpid in mind, barefooted, wan, dirty, ragged and woe-begone, were over a score of children from seven to thirteen years old, who had never been at school and worked from "sunrise to sunset," as the defunct statute provided, every week day in the year.

Of 304 white operatives interviewed in Georgia mills, forty-one, or over eleven per cent. were twelve years old or younger, many being only eight or nine; while 206, or over 56.5 per cent. began work at eleven years of age or less, the majority at eight and nine, and some spinners at four and five. Of fourteen spinners selected at random in one factory, the oldest was nineteen, the youngest was eight. In Athens 35 out of 41, in Columbus 51 out of 73, in Macon 30 out of 37, in Augusta 91 out of 113 operatives entered the mills at thirteen or less. In the

same cities respectively 10, 13, 11 and 16 children were only thirteen years old or younger at the time of the inquiry, as appears in detail from the table.

BEGAN WORK.

	4 years.	5 years.	6 years.	7 years.	8 years.	9 years.	10 years.	11 years.	12 years.	13 years.	Total.
— Spinning mill.....				12	4	2	2	1	3	..	14
Athens.....				12	6	6	7	5	5	4	35
Columbus.....			1	12	6	8	10	4	12	3	51
Macon.....				12	6	9	5	3	4	1	30
Augusta.....	1		5	8	12	17	16	8	12	12	91
Total.....	1	2	6	19	34	42	40	21	36	20	221

PRESENT AGE.

	4 years.	5 years.	6 years.	7 years.	8 years.	9 years.	10 years.	11 years.	12 years.	13 years.	Total.
— Spinning mill.....					1	1	..	1	3	6	
Athens.....					1	1	..	4	4	10	
Columbus.....					1	1	4	3	4	13	
Macon.....					3	4	4	11	
Augusta.....					1	2	2	4	7	16	
Total.....					3	2	4	9	16	22	56

The seeming discrepancy between the number registered as beginning work at from four to twelve years old and the total number within those age limits recorded as actually employed, is less paradoxical than it appears, and by no means indicates the exclusion from Southern mills of little ones too young to labor. As many infantile toilers work there as when those now adults first touched the heavy frames with baby fingers. These children are, however, disclaimed as regular employes, and are considered only helpers to some older person, their names not appearing on the pay-rolls and they themselves being unavailable for the purposes of a

statistical inquiry. In nearly all the factories small, woe-begone beings were counted. Out of 800 operatives in one corporation, at least one-sixth were less than thirteen years of age. Augusta employs comparatively few children so young, its group of factories presenting, perhaps, the best mill conditions in the South, except one Athens establishment. In some localities of Georgia, three generations work side by side—grandmother, mother and child—not one of whom has ever been at school, or can read or write a syllable. In country corporations the abuses as to hours, youth and ignorance are aggravated. The whole community is engaged in one or two mills. "Hands" being scarce and valuable, when vacancies occur two or three unskilled children are added to the force from sheer inability to find a substitute. Working mothers take their babes rather than leave them alone, and little mites under four years old enter the factory at sunrise and are shut up there till the quick coming night prevails that usurps twilight in Southern latitudes. As soon as they can toddle the small souls learn to "piece ends" and doff. Accidents under such circumstances are inevitable, but employers mitigate the suffering by unusual kindness.

Inseparable from conditions of this character is a degree of illiteracy among the white industrial population of the South astounding as it is deplorable. To those who have made no study of the subject it seems incredible that every second girl or woman in textile occupations neither reads nor writes. Onerous indeed is the present burden of taxation upon a comparatively impoverished people, educating separately in their midst an inferior race, few of whom are taxpayers;

yet more and better schools are urgently needed to elevate the poor whites. The illiterates referred to are native-born Southerners—not the negroes or the pauper Europeans who flood our great cities and among whom education is not expected. Over fifty per cent. of native Virginians, South Carolinians, Georgians and Louisianians employed in mills cannot both read and write, while thirty per cent. cannot write their name. It may be stated in the most conservative form that, varying with locality, from sixty-six to seventy-eight per cent. of the white factory operatives are wholly unfitted for any pursuit presupposing elementary instruction. Only from twenty-two to thirty-four per cent. read fluently and write legibly. Can a higher standard be demanded of districts where there are often no schools, or schools open but two or three months, and among a population that works in spinning-rooms at six, seven, eight and nine years old?

In default of factory laws, the babes are hurried into the daily round of toil, and in the absence of compulsory education the teacher presides over half empty benches while the boy helps father plough, the girl aids mother to wash and the six-year-old carries water to the men. A majority of the women and children seen in the Southern mills had never entered a day school, the Sunday school having furnished teaching to many of those who read. To have attended school two weeks or two months is a source of great pride, and one little spinner looked happy as she boasted of having been to school three times. In the Southern manufacturing centres as in the New England village, a few corporations provide tuition for the children of their operatives. Neglecting these

advantages, parents harness their progeny to the treadmill so soon as infant labor can be made available. So meagre is the general information among this unlettered folk that many operatives do not know where they were born. An Atlanta child repudiates city and State, vowing she "wur borned in Fulton" (county), while Athens girls own "Clarke" only. In Virginia, particularly, the county absorbs the State, and the birthplace is given as "King Wil-lum" or "Chaesfield," the suggestion of Virginian antecedents meeting emphatic denial. To collect nativity or age statistics among the poor whites is made doubly difficult from the prevailing ignorance of locality or time. The period chiefly impressing itself on the mind is that at which work began.

A little girl of twelve commenced labor at seven, dimly recollecting school at five or six years, but learning nothing. Another aged eleven began toil at nine and was at school three months. A maiden fifteen, working when eleven, cannot read or write and had no teaching. A child of eleven already employed a year had two scant sessions of fruitless tuition, but is illiterate and ignorant where she was born, though still residing in her native city. A girl of twenty whose mother was dead, aided by a sister eleven years old, supported a family of six. The sister worked at eight years old and the father only does "their gardnin'," the garden being a patch not much larger than a bed-quilt. The elder reads a little, but cannot write; the younger never was at school. Another victim twelve years of age began toil at eight, reads monosyllables, is unable to write; with two other children she maintains the household, the father refusing even to bring their dinner

to the mill. An infant of eight summers began factory life at five years old and has worked in two towns; there are three employed in the family besides herself, and she uses snuff which her mother provides. One poor little waif cannot speak plainly. She commenced to spin before her seventh birthday, and says: "A picnic I be twelv' yur ole." Never taught anything, her parents with six children all living in one room, this child is barefooted, ill, torpid and snuff-soaked.

The five principal cities of Georgia, justly priding themselves on their excellent municipal school system, furnish scores of further illustrations. Among minors the average illiteracy is slightly less than among adults, whose youth was spent in chaotic *post-bellum* days before even the present defective educational organization came into being. In other than textile occupations throughout the South, such as box-making, sewing, book-binding, the younger workers have felt the benefit of city schools. The facts as to illiteracy here presented, however, are not facts of twenty years ago, but of to-day. No hope exists of improvement anywhere without more and better teaching, and laws rigidly enforced to keep young children out of mills and workshops. Were an educational qualification inserted into the factory regulations as a premium upon school attendance—as, that no child under thirteen shall work who cannot read and write legibly—in anxiety to profit at the earliest moment by the earnings of their brood, parents would compel attention to study. As a gauge of public sentiment it is disappointing to find that whereas the bills which failed four years ago and this year in the Georgia Legislature made twelve

the age of exclusion, the equally unsuccessful bill of the intervening session named ten—most impressive testimony that hundreds of souls under that infantile mark are struggling for existence in the mills, neglected, ignorant, broken in health and blighted in mind, if not demoralized in character.

A habit largely conducive to the sallow complexions, puny bodies and shattered nerves of the whole mill population of the South is the universal use of snuff, which extends to children of five, six and seven years. Whatever the advocates of tobacco may contend, the inertness, lack of endurance and degraded aspect of the Southern "cracker" are in a measure due to this filthy and pernicious weed. Careful inquiry proved that most of the women and girls learn in the factories to dip snuff and chew and smoke. Among females to borrow and lend snuff is a sign of good fellowship as "treating" is with men. Every lank, chalky, saffron-hued child with black rings about her eyes had also the tobacco-stained lips. In the Maine mills where the practice is prevalent, it is termed "scouring" and "rushing;" in Georgia, "dipping" or "lipping" is the phrase, the last act involving the filling of the mouth with snuff as with tobacco, instead of its moderate use as a dentifrice. The overseers make no effort to stop the custom, some even advising it. Many mothers share their weekly package of the powder with daughters of six and upwards, but oftener the little ones obtain it on the sly, indulging only at the mill away from the maternal eye.

Among cotton operatives in Virginia the ignorance is as dense as in Georgia, and some factories present even more striking groups of illiterates than any one

Georgia manufacturing town. Out of thirty-three employés eight are just fourteen years old or less; four of the eight are totally illiterate, and only one can read a simple sentence readily. The small workers contract the snuff habit as soon as they enter the mill. In some tobacco factories of Richmond much younger and quite as ignorant labor is employed.

“Side by side with the cracker,” well-educated girls are working in Charleston, S. C., but notwithstanding this superior element mitigating the general illiteracy, forty girls out of a pay-roll of 150 were unable to write their names in an establishment where probably half the employés are minors. The record of the cotton, duck and jeans mills of Missouri, Cincinnati, Kentucky and Maryland is nearly as discouraging as regards the benighted status of the native-born operative, the employment of children and the lack in country districts of educational facilities. Minors of twelve years old are at work in the cotton mills near Baltimore in defiance of the laxly administered factory laws of the State. Among forty-eight employés in one suburban factory, thirteen, or over twenty-seven per cent. are illiterate and thirty-two began work earlier than their fourteenth year—two at the age of eight, four at nine, six at ten, five at eleven, ten at twelve, five at thirteen.

In the textile industries the illiteracy even of educated New England is considerable. Massachusetts, as revealed by the census of 1885, had among her 3,040 working children under fourteen years of age 413 illiterates—13.59 per cent. Those of native birth constituted 5.27 per cent. of the native born

children at work, and those of foreign birth represented 28.57 per cent. of the foreign born children at work, 19 being Irish, 248 French Canadian and 11 from the Western Islands. As regards the whole population ten years old and over, the native born illiterates were 1.29 per cent. while the foreign born were 21.5 per cent. of the foreign born population. The illiterates constituted but 1.03 per cent. of the population ten years and over born in Massachusetts.

Of minors between fourteen and sixteen employed in mills who could not read and write the English language, Fall River in 1887 had 1,526, New Bedford 433, Taunton 86. Few children under fourteen in the State, says one inspector, fail to write their names or read easy reading; but, between sixteen and fourteen years, twenty per cent. in some factories cannot read or write any language, while the percentage is much larger of those who have no education worth calling such. Scores write their names who are not able to pen another word or to pronounce dissyllables, the law not having reached such cases soon enough. The report for 1888 calls attention to the lack in small towns of evening schools for illiterates. As a consequence of such conditions in Massachusetts, the illiteracy of children in the immigrant population the writer knows to be widespread and lamentable. Households resident there for years have two or three workers under sixteen and illiterate, besides several younger children loafing at home on various pretexts. Whole families are losing their identity from inability to spell their name, nor is it uncommon to find a large circle of adults and children, not one of whom reads or writes any language.

The Rhode Island census of 1885 notes 2,370 illiterates from ten to fourteen years of age, or 8.3 per cent. of the population from ten to fourteen. Of these illiterate children, 1,357 are native, 1,013 are foreign born. The population of native parentage did not improve in this respect from 1875 to 1885. The proportion of native illiterates to total native population rises from 2.2 to 2.4, and that of native illiterates to total illiterates rises from 12.5 to 13.2. American-born children of foreign parentage thus lower the standard of native intelligence. The strippling who works eleven hours a day—and extra time when helping weavers strive for premiums—loses the saving influence of schools. In the *Andover Review*, July, 1885, Mr. Crowell states as regards Rhode Island: "The writer has noticed that it is not exceptional for the mother of a family to have her child a few years old at work with her in the factory; and the children are dragged out of bed in the morning."

Of 1,514 children between fourteen and sixteen employed in Connecticut, twelve per cent. cannot read or write; and if the same ratio holds good for the entire State, 2,000 children of advanced age are illiterate. The school registers prove that a majority of the juveniles do not attend school after fourteen, while many leave at twelve or thirteen. If the instruction of olden times excelled the present, was it not because school days continued till the pupil was old enough to comprehend and appreciate what he learned?

The report of the Inspector for New York State, 1888, ascribes to the employment of children large responsibility for the vast number of unemployed adults and the rather increasing than waning illit-

eracy in certain sections. Children in the Empire State work when they ought to be at school. The fact that parents must sign and swear to a certificate gives opportunity to observe how many who have passed their majority are incompetent to sign their name, and a considerable portion of these were born in the United States or were brought here at an early age. Their offspring are little superior in respect to education.

Good but unthinking people urge that children are better off working than running the streets and acquiring evil habits, as if home discipline or home attractions would not prevent their running the streets! Were compulsory education laws enforced the youth of the land would be at school under training of mind and conscience. The discipline of the teacher fits them better for all duties of life, and overseers are emphatic in testifying to the greater ease with which juvenile workers who have had school advantages can be managed than those accustomed only to a resort to brute force. "A child who has not been taught to obey rightly will never be able to command rightly, either themselves or others." "Overseers pronounce the labor of a child under fourteen undesirable and unprofitable, but parents, ignorant and selfish, or ignorant and vicious, insist upon children earning something at an age when they still belong in the nursery." The policy of employing Child-labor for the advantage of the manufacturer, though to the detriment of the human being, says one Commissioner of Labor, "makes man subordinate to the dollar, takes no account of life and its enjoyments, usefulness and possibilities, and destroys all the nobler aspirations."

Stress must be laid on the sorrowful truth that many children are engaged at tasks too great for their physical strength, becoming consumptives in consequence or suffering serious bodily harm. Most factory inspectors recommend that the age of exclusion from mills be raised to fourteen or fifteen, while physicians are unanimous in saying that any strain or continuous exertion is especially hurtful to girls under fourteen. Restraint and confinement at an age when all the muscles and the faculties should have fullest freedom and care is the most dangerous element of Child-labor. Do not the wrecks of humanity, everywhere visible in street and workshop, attest the hardship of early toil? Those years when mind and body are susceptible of the healthiest growth are spent in a monotonous round of indoor drudgery which undermines the constitution, stunts the intellect, debases the higher nature. The State should have a worthier pride than that of endeavoring to make its machinery the most productive at the lowest possible cost.

These wise thoughts of Mr. Connolly, Inspector for New York, embody the experience and conclusions of the writer, who, from personal observation in twenty States of over 100,000 working women and individual talks with 12,000, has become acquainted with the forerunning signs of every form of early death ascribable to over-work in youth. Consumption sweeps the ranks of mill operatives with a positive ferocity. Girls of thirteen to fifteen fade away in feebleness and pain, pierced by the icy winds, overheated in steaming rooms, ill clad, badly nourished and overtasked. Two or three sisters follow each other quickly to the grave before reaching woman's estate, victims of fatal lung maladies or poisoned by typhus. The

managers of working girls' clubs find it necessary to provide a refuge for members doomed to dissolution at fifteen, sixteen, and twenty years, in whom the seeds of disease were sown by premature toil.

Nor are such scourges the saddest phase of protracted and unguarded Child-labor. The New York Report of Factory Inspectors for 1888, dwells on the distressing "tale of children crippled for life by machinery, which they should not be permitted to approach, much less control. Their bleeding, mangled arms, legs and bodies are terrible witnesses of the cruel system which makes their play-time the time of toil and danger. 'Carelessness,' say the manufacturers. Carelessness not of the children, but of the lawmakers to permit the helpless little ones to be dragged or driven into these grinding mills of destruction; worse than carelessness on the part of employers who see child after child crushed between the champing dies of the power presses, and yet take no step to prevent recurrence of these accidents.

"What care they for the battalions of cripples turned loose upon the world? But the law, the government, should care. It is its most sacred duty to step in and save the weak and helpless from being deprived of their limbs. No child should be employed around a machine or factory where natural lack of foresight or caution will lead it into danger. * *

* A child is not supposed to be endowed by nature with a cautious, discriminating disposition or a thorough knowledge of the dangerous qualities of machinery. When an employer, in order to obtain the benefit of a cheaper class of labor, hires children to do work which men alone should do, he ought to

be made to pay dearly for whatever loss the child may suffer. * * * It is wrong from any standpoint, moral or legal, to employ a child at a machine where, should he turn his head to the right or left, or neglect to press his foot upon a lever, the loss of an arm or finger is the penalty."

In *The Christian Union*, May 2, 1889, discussing "Factory Conditions in New York City," Miss Clara Potter says: "In an excellently ordered card factory, of which the girls have no complaint to make, a young friend of mine saw a companion's hand taken off at the wrist and drop to the floor by the press she was working at." Girls state privately "the firm don't like it if you make much of a time about such things." Miss Potter continues: "In a large pencil factory, where children are employed to feed the pencils into a machine which smoothes and shapes them, great dexterity is needed to prevent the fingers from being caught. Constantly children lose a finger, a joint, or the end of several fingers, but no notice is taken of these accidents nor are the little ones paid while suffering from injuries and unable to work. They are employed at their own risk."

Said the bookkeeper in large print works lately to the writer: "We boiled a boy the other day." In response to a shiver of horror, he went on: "His work took him inside one of our big machines in which colors are set. The steam was turned on without anybody looking to see whether he had come out at the proper time. He was missed later, and at last found within, dead. It is supposed he fell in a fit."

While the law providing that casualties shall be immediately reported is by no means universally

complied with, eighty-four children under sixteen years old actually employed in manufacturing establishments figure in a list of 614 accidents sent in to the authorities in New York. This number is over 13.5 per cent. of the whole. Yet children under sixteen do not form 13.5 per cent. of the employés of miscellaneous manufacturing establishments, including many planing and rolling mills, and other industries in which chiefly adults are engaged. The figures show conclusively a greater liability to accident on the part of children. Among the injuries noted in Ohio, a girl fourteen lost a finger, a boy thirteen one hand, and another fourteen had a broken arm and sprained ankle. Out of eight casualties in factories in New Jersey four were fatal—two to boys and two to men. Although less than half as many boys as men are employed, their death rate is equal. When it is considered that not half a dozen States require factory accidents reported, the extent of the unrecorded suffering and mutilation throughout the Union may be conceived. Massachusetts alone has an Employers' Liability Act of any efficacy. Elsewhere human life is cheaper than the small cost of protecting it. In a Philadelphia mill employing many children under thirteen, were great holes in the floors of the only passage-way between the jarring looms.

Stairs are often rotten and hatchways unguarded. The sole exit from factories is too frequently a difficult flight of steps leading for five or six stories directly to the elevator shaft or winding about it, and this, if protected at all, protected by a single rail. A fall there means death. Fire leaps up these shafts and cuts off all egress. Doors are sometimes locked and the custodian of the key is beyond reach

for hours. While the law compels places of amusement to be amply furnished with devices for safety in case of fire, yet workrooms in which are spent the daily lives of hundreds have but one narrow door at each landing and perhaps the only stairs are blocked with packing-cases. In broad daylight the writer, carefully groping her way up and down steep, absolutely dark and often broken steps or about obstructed passages, has shuddered at the thought of a panic or alarm which would inevitably cause several hundred mortals—and among them little children—to surge into this narrow space and fight for breath and life over the bodies of the frail and helpless. It has happened repeatedly, too, that when a proprietor would attempt to show his fire-escape outside a window, not even a man's strength could open the rusty window-fastenings; but his crestfallen look was no guarantee that the defect would be remedied. So, an elevator cable that might be strengthened for five dollars breaks and hurls as many souls into eternity. It is useless to dwell upon such palpable horrors. One who walks in manufacturing districts with open eyes is confronted on every side by maimed, disfigured, crippled victims.

Not only homely industries bear the print of tiny fingers, but some amusements are lurid with the life-fires of youthful humanity. In burlesques, pantomimes, extravaganzas and spectacular displays, striking features of the performance are small boys and girls, the most promising ornaments of humble hearthstones. Though the toil is gilded, it is toil nevertheless. Hundreds of children are forced to live under incessant strain, early entering upon shams and excitement, keeping unnatural hours,

subject to exacting rehearsals, cut off from school advantages and their light fantastic attire endangering health. The study-time of theatrical children is irregular even where, as in some London schools, the sessions are arranged not to conflict with their engagements. In New York, where teaching is not compulsory, the Society for the Prevention of Cruelty to Children is interfering to some extent with such child-sacrifice; and in England recent writers have shown up the evil without yet having abolished the continuous service of young children in dramatic exhibitions.

The Fourth Annual Report of the United States Commissioner of Labor, "Working Women in Large Cities," gives many interesting facts regarding the youth of the average female producers amid industrial centres. This investigation represents 17,427 women, employed in 343 industries. The average age in 22 cities is 22 years 7 months, the concentration being greatest at 18 years. The average age at beginning work is 15 years 4 months, the concentration being greatest at 14. By cities, the summary of present age shows that (discarding the large quota of learners or unpaid helpers), very nearly 10 per cent. of the workers in our shops are under sixteen years of age. In Atlanta 14.8, in Baltimore 11.4, in Chicago 14.3, in Charleston 6, in Cincinnati 13.3, in Cleveland 10, in Louisville 9.4, in New York 14.9, in Philadelphia 8.3, in Richmond 11.9, in St. Louis 12.5 per cent. are under sixteen years of age. The youngest children are employed in a great centre like New York or Chicago, and the tendency to utilize them is more marked in Western and Southern cities than in Eastern and Northern, a

decided reaction of public opinion in this direction controlling the abuse in New England and the progressive Middle States. With less diversity of industry, Richmond and Atlanta employ a relatively larger number of juveniles. No factory laws have hitherto regulated conditions either in Virginia or Georgia, whereas, in Ohio, Missouri, and Illinois, despite factory laws the number of children engaged is large. The summary by cities as to age at beginning work discloses the fact that 28.3 per cent. began work under fourteen years. In Atlanta 39.3 per cent., in Baltimore 27, in Chicago 29, in Charleston 22, in Cincinnati 38, in Cleveland 22, in Louisville 31, in New York 32, in Philadelphia 33, in Richmond 33, in St. Louis 33 per cent. entered the factories under fourteen years of age. Over 64 per cent. began work under sixteen years old. Taking the same cities, respectively, in Atlanta 55 per cent., in Baltimore 61, in Chicago 61, in Charleston 39, in Cincinnati 72, in Cleveland 63, in Louisville 64, in New York 72, in Philadelphia 69, in Richmond 60, in St. Louis 68 per cent. began their apprenticeship to toil before the age of sixteen years.

When regarded from the point of view of the limited education which could have been acquired by 28.3 per cent. of future industrial mothers condemned to labor before they were fourteen, and of the 64 per cent. whose schooling ceased long before they were sixteen, the outlook is not hopeful for the character or the homes of our workers, both so deeply influenced by the standard as of intelligence of the mother. In a graver aspect are figures impressive which indicate that the physical development of

wage-earning girls has been and is now being impaired by the early age at which toil commences. Is not deterioration of the forces suggested by the fact that while 93.8 per cent. were in good health, 4.7 per cent. in fair health, and over 1 per cent. out of health at beginning work, at the time of the investigation only 83.5 per cent. were in good health, 13.6 per cent. in fair health, while 2.7 per cent. were out of health?

The period from seven to fourteen is the most vital in the growth of the child. If confined at arduous mechanical pursuits during this impressionable season of youth, its activities must be cramped, its size stunted, its moral nature insensitive. Yet 28 per cent. of our female workers were immured in shop walls during those critical years. The interval from fourteen to sixteen is often the most dangerous in the development of womanhood; that when, as all physicians, educators and students of social science testify, the establishment of those sexual functions essential for the perpetuation of the race must not be imperiled by any undue strain either of mind or body. Yet 36 per cent. of our young women have entered upon difficult and exhausting labor at this crucial epoch in their lives. If the years from twelve to fifteen inclusive be taken, 58 per cent. of our girls have been put in the tread-mill when work was calculated to be most hurtful to them. Degeneracy of the human species must ultimately revenge this wanton defiance of physiologic laws. Physical deterioration of womanhood is an evil against which the State should provide; and physical deterioration has already followed the crowding of millions of females into ill-ventilated workshops at weary drudgery from ten to fourteen hours a day.

Whatley Cooke Taylor, in a paper for the Social Science Congress, 1882, contends that infant mortality varies in strict accordance with the density of population, and is not injuriously affected by the employment of mothers in mills and manufactures. His researches, however, leave out of consideration the important question as to the occupation of the mother previous to marriage. It has been the writer's observation, with scarcely an exception, that infant mortality in communities where the mother had been employed in gainful pursuits from early childhood far exceeds the normal rate. Commonly two children die during infancy or extreme youth where one survives. Childless parents of the industrial class have again and again said of their babies: "All mine are in the graveyard," or "We've buried more than half of ours." Of nineteen infants born to a French Canadian couple, nine died before reaching their second year. Whole families fade away for want of stamina before the age of ten. On the part of mothers, repeated abortions—as many as four to seven in rapid succession, and entailing great suffering and domestic chaos—testify to constitutions so undermined by toil and unsanitary conditions as to be unable to bear the ordeal of pregnancy; and this among a population too simple and ignorant to contravene the laws of nature. The travail of childbirth is woman's most trying heritage. If this travail is undergone for naught; if the courage and health of our mothers ebb away through bringing into the world still-born or puny offspring whose weak life flickers out in the first few years of existence, then is maternity not a blessing but a degradation, a thwarted and violated function; and wifehood

is the brand of an infertile passion, the scape-goat for unholy lust. The children who persist despite hideous tenement-house influences and congenital weakness are a shambling, crooked-bodied, narrow-chested, often scrofulous race, physically morbid, morally misguided, craving stimulants and predisposed to crime.

One consequence of trading in Child-labor as in any other commodity is the congestion of population in cities. From country and village homes, wholesome, however poor, entire families are dragged to the industrial centre for the pittance their toil will bring. Not only are workers thus condemned to the ten and twelve hours' dreary round at machinery or tasked in close, dusty rooms, but growing babies, toddlers, romping school-youngsters are immured among tenement hovels. In little crowded rooms sunshine is shut out and life is quenched. Exposed to unimaginable evils in the alleys and courts of the poorer quarters, if health remains intact, character and purity are often wrecked.

Under the present competitive system, it is hard, well-nigh impossible for a man with seven or eight children less than fourteen years of age to keep away hunger, far less to provide clothing or education. His neighbor, perhaps, has an equal number of boys and girls able to work, any one of whom earns as much as the father of the helpless family, and all of whom can afford to accept lower wages. Under the existing industrial organization the head of a household not gainful is driven to labor for the earnings accorded a boy of fifteen or sixteen. One family is used as a club to kill the others. The working classes have to some extent begun to regard their

offspring as so much capital. Capable and intelligent handicraftsmen have said to the writer that they deem a man a fool who selects the trade of a skilled mechanic where his children cannot aid him, instead of making himself useful in a cotton mill till he places all his boys and girls to advantage there, and then living in idleness on their gains. Except among skilled artisans, saving has become impracticable for households dependent on the earnings of one man. Standards of living being higher, debt must be contracted; and where heirs come fast, the future strength and gainfulness of the child is discounted. "We'll pay off when the young ones are big enough to work," promises the thoughtless mother, year after year behind hand, and regardless that her boy's labor means fatal competition with the head of some other family destitute as this one. Yet workingmen declare that children put early at toil in factories are already broken down and useless at the age of twenty.

A natural result of the almost universal employment in lieu of the universal education of children thirteen and fourteen years of age is that there are hordes of idle adults all over the land whose places the little ones usurp to the detriment of both. Not less suggestive is the fact that laborers working for lowest wages are sometimes drawing the highest incomes. They can afford to take less pay because they have helpers, and the pittance of \$4 to \$5 a week dwindles beside the aggregate earnings of their brood by prolific foreign mothers. Not only is the man thus in receipt of from \$1,000 to \$1,500 a year able to beat down his worthy rivals below the already narrow margin for existence, but as a father

he is deposed from his rightful position in the domestic circle, and is scorned and ignored by the swaggering boys or froward girls who displace his labor. The sanctity of the family order is destroyed. All bonds are loosed, authority is a dead letter, respect and reverence for age disappear, the home has no hold upon its members. Such policy leads to the gradual extinction of the male operative.

It is uncertain how long, on this great Western battlefield of labor, civilization will struggle with greed and inhumanity. Noblest institutions grow in lands moistened by ancestral life-blood. A deep and holy meaning pervades the classic fable of the crimson drops that flowed when Æneas plucked the leaves from over the grave of Polydorus. Emancipation of childhood may have to be won in another age by the arms of workers in whose veins still circulate the life currents drawn from suffering hearts that beat and bleed to-day. But reformers have sounded the alarm, watchers are awake. In some States the factory laws have done their work, and the evil of Child-labor is surely decreasing. Public opinion is getting a philanthropic twist. Manufacturers of the better order scorn to profit by the toil of feeble and driven little ones. Employers who still resort to such unhallowed methods to swell their gains slink more and more into byways, hiding their wickedness from the light of day. That the employment of small children is now deemed wicked is a great step in reform. Ten or fifteen years ago the practice was unblushingly carried on and needed no defence; to-day the exploiter who builds up a great business by grinding cheap labor is distinctly on the defensive. He must

forsooth trump up hypocritical reasons for dealing in human lives—as, that the family are needy or the girl who lives at home wants pocket money; or else to divert attention from his low wages he flaunts forth some catch-penny benevolent scheme.

Profit-sharing, too, the entering wedge for a juster economic dispensation, discourages incompetent and irresponsible Child-labor.

That men of honor and probity fear no investigation of their attitude upon this grave issue is shown by the fact that thousands of employers not only voluntarily consented to an “inquisitorial” examination from the general government which had no jurisdiction over their affairs, but in the main furthered its effort to obtain an insight into the condition of working women, as shown by the Fourth Report of the Department of Labor. Even proprietors forced by narrow margin of profits to secure the least expensive producers are eager to free themselves from a necessity so unpleasant to themselves and so menacing to society. Large corporations, which formerly utilized “help” of all ages now forbid Child-labor within their walls, a rule violated often without the knowledge of the officials. Other monopolists, less conscientious, who once controlled the lawmaker and prevented legislation protecting labor and circumscribing their own powers, are overborne by public clamor for ordinances more just and humane.

In Athens, Ga., one mill refuses to employ children under twelve, though no factory laws forbid; and similar regulations mark the higher grade of establishments in all industries. Chicago has signaled herself by appointing five women factory inspectors, a

guarantee that Child-labor will henceforth be bitterly fought. Philadelphia possesses two female inspectors; New York is striving for a large number. The establishment by a majority of States of bureaus of labor whose function it is to report industrial phenomena, is another hopeful sign.¹ Unjustly criticised as neglecting this particular branch of economic inquiry (since taking a census is out of their power, and nothing short of aggregates can be of value in Child-labor investigations), yet the very existence of these bureaus is a standing threat to the grasping and culpable proprietor. At any moment he may be pilloried for public scorn, even though beyond the reach of the nemesis of the law. The Employers' Liability Act of England is being copied as our factory regulations become more efficient, and in time safeguards will be thrown about all occupations which endanger human welfare. The landlord, too, must be held accountable for the sins which lie at his door, that tenant manufacturers may have fair play in the endeavor to promote the comfort of employés.

In support of these propositions, to show that such conclusions are far from optimistic, the testimony may not be inopportune of men every day brought face to face with the industrial situation, able to substantiate their assertions by a formidable array of

¹ At the seventh annual convention of chiefs and commissioners of bureaus of statistics, a committee was selected to name important subjects for investigation. This committee recommends that Child-labor be considered, and that, contemporaneously with the Federal census of 1890, each bureau shall ascertain and report the facts for its State as shown by the census, and all other facts relating to Child-labor which might result from separate investigations. The scope of the proposed inquiry is broad and exhaustive.

facts. The Massachusetts Factory Report for 1887 states that in textile industries the prohibition concerning the employment of minors under fourteen is observed more strictly than in many other occupations. Several inspectors coincide in declaring that the number of children so engaged is on the wane. Rather than be annoyed by keeping within the provisions of the statute, employers are refusing to hire workers under sixteen. The Massachusetts Report for 1888 is more emphatic and more encouraging. Mr. Dorn, Inspector for Ohio, "has noticed the growth of public feeling in favor of further restricting the employment of children and of compelling their regular attendance at school."

In 1888, the Board of Education of Connecticut reports 1,173 children dismissed from work for being under thirteen years of age. The same authority, April, 1889, declares that children are not generally employed under thirteen in establishments enumerated in the act; that the Child-labor law is easy of administration and has accomplished its purpose of preventing the toil of the young, though "parents are persistent and mendacious;" that three years' observation supplies evidence of its benefits to children. The greed of parents is restrained, the rights of minors respected; the advantages of school extended. Good results are already apparent from the enforcement of the statute in New Jersey.

One New York inspector thinks that the trouble of posting Child-labor notices and obtaining affidavits is so annoying that there is probably thirty per cent. less Child-labor in the State than three years ago, despite growth of population. Observers at Cohoes in 1885 counted 1,500 children, ragged, dirty, piti-

able, filing out of the gates of one corporation. An observer there in 1889 saw relatively few children who were certainly under the legal age. Many Western States are adopting compulsory-education laws—always an obstacle in employing Child-labor. In Chicago, from 1881 to 1882, the increase of Child-labor was sixty-eight per cent. The admirable Report of the Department of Health of that city, however, furnishes abundant proof of the efficacy of factory laws and inspections; the number of boys and girls working in factories has thereby been reduced from 9,000 in 1884, to 2,802 in 1888, and this in the face of a phenomenal bound in population and manufactures. A higher authority than any heretofore cited is Hon. Carroll D. Wright, U. S. Commissioner of Labor. In his address before the convention of labor commissioners at Hartford, June, 1889, he says: "Everything that has come under my observation, so far as facts are concerned, tends to show that Child-labor is on the decrease. This is absolutely and certainly so in the commonwealth of Massachusetts. * * * From 1875 to 1885, the reduction in the number of children employed between the ages of ten and fourteen years was from the neighborhood of 8,000 to about 3,000, * * * while for children under ten, there is practically no employment at the present time. Data from other localities, while meagre, indicate the same general tendency—not so rapid, but yet a tendency to reduce Child-labor. * * * Should the Eleventh Census show that a very much greater number of children are employed in 1890 in the factories of the country than were so employed in 1880, it would not indicate an increase in the employment of Child-labor, unless

the facts showed that there was an increase in the same localities, *pro rata*, of course, to the population, because where the factory system springs up anew, or meets extension, Child-labor might be employed to a large extent and thus show an increase in the aggregate, while, as a matter of principle, it is on the decrease. * * * In 1874, I took the ground that * * * I would not allow a girl under sixteen years of age to be employed in any kind of factory or workshop, and I said, further, that if she could be free until she reached the age of twenty, mankind would be the gainer."

The world does not move backward. You cannot get a chicken again into the egg-shell. An abuse clearly controllable is an abuse half conquered. The need of the hour is less the need for new laws than for the enforcement of those which exist but are overridden. Uniform factory regulations should be adopted. If some States refuse to shorten hours or restrict the employment of children while other States adhere to a more progressive policy, in the latter all industries will be driven out in which Child-labor is available. Although in some respects such a result is desirable, a better remedy would be the universal prohibition, except within certain limits, of the child as a factor of industrial life; for in those pursuits in which wife and children work the ratio of wages for man is lowest.

Stricter inspection of mills, workshops and stores is imperative. Rightfully to carry out laws affecting female minors, the appointment of properly qualified women inspectors is indispensable; but incompetent females would lower even the present efficiency of the factory enactments and discredit

the whole system. Every State in the Union should rouse and care for the physical and moral welfare of its youth. Though women and children are not yet in many localities engaged in gainful pursuits, the rapid development of our industries and the introduction of the factory system may in the near future cause the employment of all available muscle and intelligence. Preventive laws are easier to administer than reformatory laws. The evil of Child-labor should never be allowed to rear its repulsive front; for, once harbored or dallied with, it is difficult to extirpate.

No factory regulations permitting in any form the toil of boys and girls deal broadly or effectively with the issue unless they also provide for the previous or simultaneous education of the worker. Among States where compulsory school attendance is aimed at, the varying periods of from twelve to twenty weeks should be harmonized and a uniform period adopted. The State being interested in securing intelligence and faculty in its future citizens, compulsory teaching ought to become universal. The English half-time plan, half-day work, half-day school, produces excellent results and affords a lighter task to double the number of children, thus distributing earnings more widely.

Germany and France, the most enlightened of peoples, compel their youth to be taught. The day when every American child from seven to fourteen years of age shall be required to attend school, or, if employed, to alternate work with study, will witness the dawn of a new era of industrial prosperity.

Not only is compulsory education in early years essential, but it might even be continued to more

advanced age. The limit at which labor may begin could with advantage be placed at sixteen years. Cases of hardship would follow at first, and must follow so long as the conditions of our civilization remain as at present. It is not only a sign of impotence, but further, it is irrational and absurd to decree that children of a certain age *shall* attend school, without providing means by which the law can be fulfilled. Might it not be the soundest policy, and not necessarily pauperizing, for the State to help the needy family as an actual investment—a means to an end? Education is the child's outfit, and while obtaining it he must be supported. His services in after years repay the State, which, unless so much capital be used to develop his intelligence, may be forced to expend double to curb his vice.

Manual training, industrial schools, where aptitudes are stimulated and arts of self-maintenance are taught, do more than evolve faculty and round character. They make better workmen than our shops ever produce in this epoch of specialization of labor. Industrial training which the child obtains by turning a crank, pressing a lever, or washing glass bottles ten hours a day for wages, improves neither his handiness nor his perceptions. On the contrary, the automatic processes of machinery too long continued tend to stupefy and degrade. A wiser alternative would be that the State should pay destitute parents an equivalent for the services of the child while educating it in devices that forever after will render poverty less likely. By scientific instruction at the plastic age to rescue young lives from the deadening effects of petty toil, to change the whole existence from helpless incom-

petence and almost certain despair into a useful, happy career, based on mastery of self-supporting arts, should be the aim of all legislation and the ambition of every man who loves his kind.



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LIST OF PRINCIPAL AUTHORITIES.

1. Handbook of Commercial Geography. Chisholm. London, 1889.
2. Schmoller's Jahrbuch für Gesetzgebung, etc., Vol. viii, p. 251 and 751, and Vol. x, p. 1250.
3. Canaux de Navigation—Dictionnaire des Finances. Paris, 1886.
4. Navigation Intérieure—Dictionnaire des Commerce. Paris, 1873.
5. House Executive Document No. 79, Vol. xxiii, Second Session Forty-ninth Congress. 1886-7.
6. American Society of Civil Engineers. June 25, 1885.
7. Engineer. 1888. Do. 1889, pp. 59, 109, 153, 181, 195.
8. Society of Arts' Congress. May, 1888.
9. Engineering. August 29, 1884.
10. House Executive Document No. 117, First Session Forty-ninth Congress.
11. Institution of Civil Engineers. Vol. xcvi, p. 195 and foll.; Vol. lxxviii, p. 278; Vol. lxxvi, p. 160.
12. Van Nostraud's. Vol. xxix, p. 8; Vol. xxxi, p. 406.
13. Scientific American Supplement. February 1, 1890.
14. Report of Select Committee on Canals. English Parliament, 1883.
15. Le Genie Civil. 1887.
16. Wochenschrift des Oest. Ingenieurvereins. 1888.
17. Annales des Ponts et Chaussées. 1889.
18. Report of British Association for Advancement of Science. Birmingham Meeting.
19. Report of Committee on Railroad Rates. London, 1872.
20. Stahl und Eisen. 1888.
21. Les Annales des Navaux Publics. 1887. p. 1927.
22. Edinburgh Review. July, 1889; do., April, 1887.
23. Spectator. Vol. lxiii, p. 837; Vol. lxi, p. 1234.
24. Nation. Vol. xlix, p. 424.
25. Contemporary Review. Vol. li, p. 71.
26. Murray's Magazine. 1889. p. 185.
27. Railroad Transportation. Fink. Papers published 1874-81.
28. Lehr, Eisenbahntarifwesen. Berlin, 1879.
29. Schreiber, das Tarifwesen der Eisenbahnen. Vienna, 1884.
30. Cohn, der Englische Eisenbahnpolitik. Leipsic, 1883.
31. Transportation Routes to the Sea Board. Washington, 1881.
32. Reports on Internal Commerce of the United States. 1884-87.
33. Railway Problems. J. S. Jeans. London, 1887.
34. Various Congressional Reports on Inter-State Commerce.

THE CANAL AND THE RAILWAY.

There has been of late years a growing and significant revival of interest in the development of artificial water-ways.¹ It would be difficult to assign an exact date for the beginning of the movement, or to say in what country it first started, or even what were the most important causes in producing it. Twenty-five years ago, it is safe to say, interest in canals had almost entirely died out. It was generally accepted as an easy demonstrable truth that the canal had had its day, and those who thought that it might again become an important element in the transportation system of the world were looked upon either as ignoramuses or visionaries.

The opening and phenomenal success of the Suez Canal may be taken, perhaps, as well as any other date to mark the dawn of the new era. Certain it is, at any rate, that from about 1870 to the present time there has been a steady growth in the theoretical and practical attention given to this subject. One begins at that time (and with regularly growing frequency of late years) to find articles on this subject in the periodical literature of the day. It appears more often as a topic of discussion in technical associations. Parliamentary and congressional committees begin to report upon it. Governments make

¹ Compare *The Railway Question*. By E. J. James. Pub. Am. Econ. Association.

proposals in reference to it. Statistics are collected in regard to it. Legislatures debate various aspects of the problems connected with it. An International Congress has lately been established for the discussion of topics relating to it.¹ And what is more important than all from a practical point of view some important works have been actually carried out, others are under way, and still others are projected.

It is also interesting to note that this revival of interest has occurred in nearly all modern civilized countries at the same time, though in very unequal degrees in different countries. It is quite as noticeable in England as in Germany—in the land where all important means of transportation are in the hands of private parties, as in the land where the railways have for all practicable purposes become government institutions—also in France, where the railways, though chiefly private, are under government supervision, quite as decidedly as in either of the other countries. It is as characteristic of the countries with relatively low rates of transportation by rail as of those with higher rates.

The modern history of canals as an important element in the world's commerce prior to 1870 was much the same in all countries. General attention was first attracted to the enormous possibilities of cheapening inland transportation by the use of artifi-

¹ It is known as the International Inland-Navigation Congress. The idea originated at Bremen in October, 1884, at a meeting of Belgian, German and Dutch engineers, who had assembled to consider the navigable ways and ports of Germany. The first congress was held at Brussels in May, 1885; the second was held at Vienna in June, 1886; the third at Frankfort in August, 1888, and the fourth at Paris in the summer of 1889. It has resulted in bringing to light an immense amount of valuable information.

cial waterways something over a century ago. The Duke of Bridgewater's Canal from Worsley to Manchester, constructed in 1759, and afterward lengthened to Liverpool in 1772, fairly opened the modern era of canal construction—first in England and afterward on the Continent.¹ So great an impetus was given to the industry of the country by the opening up of this canal and the system developed shortly after, that by the end of the century canals became the rage, as railways subsequently. A great canal mania broke out. Numerous schemes were projected and heavy premiums paid for shares. Speculative building of all sorts was indulged in, bringing in the sequel ruin to hundreds and thousands of investors. The canals of that day, however, paid in many cases handsome premiums. The dividends on some of the main lines amounted to 100 per cent. of the capital per year. The shares of the Loughborough Navigation stood at 1,200 per cent.; those of the Mersey

¹ Compare a series of articles on "Canals and Inland Navigation" in the *Engineer* for 1889, by W. H. Wheeler, M. Inst. C. E., to which the writer is much indebted; referred to in this paper as "Canals and Inland Navigation." Mr. Wheeler says of this canal: "The effect of the opening of the Duke of Bridgewater's Canal was not only immediately to reduce the cost of conveying minerals, raw materials, manufactures and produce to one-fourth of what it had been previously, but also by giving facility of transport, enormously to increase the manufacturing industry of the country and the imports and exports from other countries. The greatly increased number of sea-going ships required to accommodate the traffic brought to Liverpool by the canals connected with it raised it to a first-class port. The tonnage of English ships increased three-fold, and the number of sailors was doubled. As Liverpool and Manchester owe their first great rise to the Duke's canals, so Leeds may ascribe a great part of its prosperity to the Aire and Calder system. Birmingham would never have developed its hardware trade before the era of railways but for the canals connecting it with Liverpool and the seaports."

and Irwell, the Erewash Canal, etc., at 500 and 600 per cent.

What was done in England was repeated on a smaller scale elsewhere, though before the English example could produce its full effect on the Continent, the war of the French Revolution and the great Napoleonic struggles broke in to prevent any such enormous development as had occurred in England; and before the nations again awoke from the long reaction following the battle of Waterloo, the railway had come to revolutionize the whole conditions of transportation.

If France and Germany lagged somewhat in this race the same could not be said of the United States. The phenomenal success of the Erie Canal, begun in 1817 and finished in 1825, aroused an immense enthusiasm for the construction of similar works throughout the country. The original cost of the canal was \$5,700,000. In 1852-3, although the tolls had been reduced to about one-third of the original figures, the revenue was over three million dollars per year. Interest in canals was, as a consequence, everywhere quickened, and up to 1880 nearly 4,500 miles of canal were constructed—by far the largest part of it finished or begun before 1840. The Erie Canal is the largest canal in the world of anything like its importance, being, with its feeders, over 350 miles in length. There were several other long canals, notably the Ohio Canal and feeders, 328; the Miami and Erie, 285; the Illinois and Michigan, 102; the Chesapeake and Ohio, 180; and the Morris Canal, 103—all but one begun before 1830. Adding 411.14 miles of slack water to the canal length, we have 4,879.74 miles of canal and slackwater constructed

in the United States at a cost of \$214,041,802, exclusive of the works under the supervision of the general government.

In 1825 the railway era commenced, and slowly at first, then by leaps and bounds, the tonnage of the railways went up, while that of the canals, if it did not go down and disappear altogether, as in many cases, failed at any rate to hold its own against the railway, except in very few cases. So absolute was the victory of the railway that, as said above, the belief became general that the days of the canal were over—an opinion which the railway interests have sedulously fostered.

The cause for the decline of the canal was a complex one—not by any means so simple as it is often represented to be. The fundamental one, of course, is the fact of the indisputable (and from all present indications) permanent superiority of the railway in many of the most essential elements of a desirable means of transportation. This superiority is so manifest that it is almost superfluous to dwell upon it, and yet for the sake of the contrast to be presented later, one or two of its aspects may be mentioned. The most striking point of superiority is, of course, its speed.

The expectations entertained at an early date in regard to the probable speed of railway trains have not even yet been realized in any country. But even if we take the average rate of trains—freight and passenger—to be from twelve to thirty miles, the canal makes a poor showing with its average two to eight miles per hour. The canal exceeded the last figure somewhat in exceptional cases. Thus the trip from Glasgow to Falkirk—thirty miles—was regu-

larly made in 1836 in three hours. On the Ardrossan Canal one horse regularly drew sixty passengers from Glasgow to Paisley in forty-five minutes. The distance from Glasgow to Johnston—twelve miles—was performed in one hour and a half. The rate of speed on the road from Liverpool to Manchester was ten miles per hour.¹

But even this maximum speed on the canal seems intolerably slow when compared with railroad speeds.

Another circumstance in favor of the railway is the fact that, generally speaking, it can be worked at all seasons of the year and day or night. The disturbances of traffic are, at any rate, in the climate characteristic of the northern temperate zone, only occasional, while the canal is rendered useless by ice for a large percentage of the time. In the eleven years from 1873 to 1883, inclusive, the Erie Canal was closed to navigation for 151 days in each year, on the average, *i. e.*, over forty per cent. of the time. The canal, moreover, under existing conditions and methods of work, is often useless owing to lack of water. As this circumstance usually happens in what would otherwise be a working season it acts still further to diminish the efficiency of the canal.

The fact that the canal is dependent on an adequate supply of water limits, of course, very much the possible routes for canal construction; and as the cost—both in time and labor—of going from level to level is very great, the canal is practically impossible in many places where the railway can easily go. The railway, by throwing off cheap feeders in every direction, can more easily tap an extensive, hilly country than the canal. These cir-

¹ *Ibid.* of Scotland. *Murray's Magazine*, 1889, p. 135.

cumstances constitute for the railway a very real superiority under most conditions and for most kinds of traffic.

But great as this superiority is it does not explain of itself the overwhelming victory of the railway at all points. In England one of the circumstances which contributed powerfully to the ultimate victory of the railway was the extraordinary obstinacy with which canal owners clung to their high dividends, refusing to abate one jot or one tittle of their high tolls, fighting the railways at all possible points, until railway managers saw that they must concentrate their efforts upon breaking down the canal opposition. Even when the canal owners saw the traffic departing from the canal for the railway they still refused to take the only course which lay open to them, viz.: the enlargement and improvement of the canals and the consequent cheapening of the tolls. When once the break was made in the case of a few great lines, and the fact became clear that traffic was being rapidly diverted, canal owners became frightened, and were willing to take what they could get for their property. It became impossible to get capital for the improvement of canals for two reasons: People began to distrust their permanent prosperity, and the railway mania, which was now fairly under way, absorbed all the capital that was to be had.

It is a fact not generally known that a large part of the income from the English canals in the period immediately preceding the railway era was derived from passenger traffic. The passenger traffic on the Glasgow-Falkirk Canal amounted to 300,000 in the year 1836. In this line of business the canal

could not, of course, compete with the railway, and no amount of effort on the part of canal owners could hold this traffic. The rapidity with which it passed away astonished and disheartened canal managers to such an extent as to prevent them from seeing what immense natural advantages they had in the heavier business.

This state of things favored the plans of railway promoters, who saw very quickly that the best thing for them to do was to get hold of the canals and let them go to ruin. Accordingly in all countries they began to acquire the canals. They were most successful in this in England and the United States, where they were able ultimately to get possession, if not of all of them, at least of enough to enable them to control practically the waterways. Thus, in England, Scotland and Wales, in 1880, there were 4,033 miles of canal and canalized river navigation. Of these 1,447 miles were under railway control, of which no less than 948 miles passed into the hands of the railways during the three years (1845-47), when the railway mania was at its height and the fright of canal owners the greatest. Among those under railway control are most of the important lines. It is not necessary, of course, for a railway actually to own an entire canal, or system of canals, in order to control it. All that is needful is that it own or control one part or one link in a chain, since that practically puts the whole line at its mercy. The active warfare of the railway upon the canal goes a long way to explain its decline in the fifty years from 1825 to 1875.

The condition of the canals even in their heyday was such as to make them an easy prey to such a

powerful antagonist as the railway, even if the latter had had no advantages except such as spring from better organization. The system of canals in England (and the same thing was even truer of other countries) was really no system at all. It was an aggregate or a conglomeration of ditches, of no uniform system of construction, of varying depths, of varying widths, belonging to different companies, with different rates of toll, with no system of combined forwarding of goods and no plan of through booking. The individual who wished to ship goods had no means of knowing what it would cost him, and could find no one to become responsible for the goods from the starting point to the close of the journey. The old-fashioned canal had often only two or three feet of water, with locks six or seven feet wide. Now a single stretch of such canal as this in a system or chain, however long, would divide it immediately into two parts, and no matter how excellent the other stretches might be, the capacity of the system of canals was measured by its narrowest and shallowest part.

How impossible it was to readjust this system and organize it efficiently in time to meet the competition of the railway may be seen from the fact that even now, on the main system of canals, there are two or three different gauges of locks; and even where the canals forming a continuous line are approximately of the same size the gauge of the locks is different, being either shorter or having less depth or width.¹

For example, the line from the coal fields of Derbyshire and Nottinghamshire to London comprises the canals of seven different companies, and has four

¹Cf. *Canals and Inland Navigation*, p. 109.

different gauges. The locks have an average width of 14 feet 6 inches, but there is one link in the navigation on the Grand Union Canal where the locks are only 7 feet wide, and this limits the carrying power of boats on this line to 24 tons; whereas on other parts of the line the boats can carry from 60 to 80 tons. From London to Liverpool there are four breaks of gauge, the smallest allowing ships of only 30 tons to pass, while the largest permits those of 80 tons. The 30-ton boats that can thus go from London to Liverpool would not be safe for navigating the Mersey, and the cargoes, therefore, would have to be transhipped into larger craft upon arriving at the estuary. These difficulties have put an end to the through traffic that formerly existed along this route.

The Erie Canal has always been able to float larger vessels than its locks would admit. The prism of the canal in 1872, for example, was sufficient to float boats of 650 tons, while some of its locks only admitted boats of 225 tons. The canal at that time could have floated 12,000,000 tons to tide-water, but its locks limited the possible amount to 4,000,000. The cost of freight in boats of 650 tons is only about 50 per cent. of that carried in boats of 225 tons.¹

To the above circumstances should be added another—the result of the foregoing, it is true, but of powerful reflex influence in delaying the revival of interest in canals—and that is the fact that the railway development not only absorbed public attention completely, commanded absolutely the interest of investors, but as a natural result monopolized almost

¹ Compare Internal Commerce of the United States. Treasury Report, Washington, 1885, p. 426.

as completely the technical ability of the country. Every engineer of any promise saw his hopes of preferment in the railroad. The great fortunes, the great reputations were all made in railroad building or railroad management, and it was accordingly into this career that everybody went who could get a foothold there. The result was just what might have been expected. Improvements in canal building or management stopped. The railway continued to advance. Millions and hundreds of millions of dollars were expended in experiments of all sorts. All kinds of railroads were built into all sorts of places, under all sorts of conditions; the results of experience were carefully collected, and every year, almost, saw some great improvement added to the long line of devices which increased the efficiency of the railway. During all this time—over a generation—the art of canal building and management stood almost absolutely still. It is even to-day the canal of 1825 trying to compete with the railway of 1890. The improvements that might be introduced, the lessons which enable us to build a better canal to-day than sixty years ago, have nearly all been learned in other fields, and are only by accident applicable to the canal, while the improvements in railway making have been largely developed as the result of our experiments in that line.

One point ought to be mentioned in this connection. It would have been impossible to have effected any great improvements in the canal system during the last fifty years without liberal authority from the government to compel the coöperation of existing companies. This authority it would have been im-

possible to get in view of popular indifference and ignorance of the possibilities of cheap transportation by canal on the one hand and the opposition of the railways on the other.

It is no wonder, then, that the canal went down. The undoubted superiority of the railway from many points of view diverted much of the most lucrative traffic from the canal, its striking success from the first, the unbounded confidence of the public in its future, the almost infinite possibilities of investment it offered to the capitalistic public, the enormous profits realized by many promoters and builders, the seemingly infinite field for its expansion, concentrated public attention upon it to the exclusion of its competitor; it absorbed the capital, absorbed the technical talent, and, finally, the canal itself—at least to such an extent as to enable it to control the system as a whole.

What was true of England was also largely true of the United States, and companies and communities not only refused to improve their canals, but they let them run to waste, or worse yet, turned them over to railroad companies, which, in many cases, proceeded to fill them up if they did not decay fast enough by being let alone.

The wonder, then, is not that the canal declined, but that it should show any signs of revivication. Let us turn, then, to the question: Why this revival of interest in this subject? and in the first place, what are the signs of the growing attention paid to the canal and its function in our modern system of transportation?

To begin with Prussia, where the railway system is now practically a government monopoly, the

awakened interest in canal building dates from the early part of the seventies at a time when the railway was still substantially in private hands. But the time of serious activity is to be found after 1880.

The Prussian government laid before the legislature on the 24th of March, 1882, a project for a ship canal from the coal districts of Westphalia to the sea coast at the mouth of the Ems. As the session closed before action could be taken, the plan was again presented at the next session, beginning December 31, 1882.¹

The proposition was for a canal to be built and operated by the government, and asking for authority to contract a loan of 46,000,000 marks, (\$11,500,000) for the purposes of construction. The government, as explained in the project, was simply taking up a plan entertained by Frederick the Great, of connecting this region with the North Sea, a plan which had been warmly advocated by those interested in the Westphalian coal and iron industry since 1857, and approved by the Central Union for the promotion of inland navigation founded in 1869.

The House of Deputies accepted the plan of the government as a whole. As it regarded the project, however, as much too limited in its scope to satisfy the legitimate demands of the present it approved the scheme, adding an additional paragraph to the law authorizing the government "to contract a loan of 46,000,000 marks for the partial construction of a system of canals which should unite the Rhine with

¹ Compare an article on "*Die Frage des Kanalbaues in Preussen*," by Professor Meitzen in Schmoller's *Jahrbuch für Gesetzgebung*, etc., vol. 8, p. 751, from which most of the account in regard to Prussia is taken, cited in the following pages as "*Kanalbau in Preussen*."

the Ems, the Weser and the Elbe, the first link in which should be the line proposed by the government in the project." The House also passed a resolution requesting the government to present a plan of uniting the Westphalian district to the Rhine and Elbe, and of constructing a canal from the mountainous districts of Upper Silesia to Berlin.

The Upper House, after a keen debate on the amended bill, which had been accepted and was then supported by the government, rejected the scheme by a vote of 70 to 65. It immediately passed a resolution, however, by a large majority, requesting the government to present a plan of uniting the eastern and western portions of the monarchy by a network of canals constructed on some uniform system. In view of the plain agreement of legislature and government as to the desirability of developing the present waterways into a comprehensive network of efficient canals, it is plain, says Professor Meitzen, that Prussia stands upon the verge of a fundamental and highly important decision, which, in many respects, resembles that of 1837 concerning the railways.

The systematic plan here foreshadowed has not been fully carried out, but every year sees some substantial improvement in the system of artificial waterways in Prussia, and the other German States are following her example in this respect.

In France the interest has, if anything, been even more marked than in Germany. In 1879 the legislature decided that all the main canal locks throughout the country should be 131 feet in length, 17 feet in width, and have $6\frac{1}{2}$ feet on the sill of the locks, with a clear height of 12 feet under the bridges.

These dimensions allow for the use of barges carrying 250 to 300 tons. To cover the cost of this and other improvements a sum of £40,000,000 (\$200,000,000) was voted, and the alterations have been gradually proceeding since.

A glance at a few of the leading canals actually in process of construction at home and abroad may serve to show how active the interest is at present in this subject:¹

A canal is being cut through the Isthmus of Corinth to unite the waters of the Ægean Sea and the Gulf of Lepanto. It will be about four miles long; was begun in 1882; will be finished in 1892, and its probable cost is about \$12,000,000. It will have a surface width of 92 feet, a bottom width of 52 feet, and a depth of 28 feet. It will shorten the voyage from the Adriatic Sea to Turkey about 185 miles.

The North-Sea-Baltic Canal, extending from Brunsbüttel to Kiel, a distance of about sixty miles, was begun in 1887, and is being pushed with remarkable vigor. Its width will be 197 feet at top, 85 feet at bottom, and 28 feet deep, with a possible 29½ feet. The estimated cost is \$39,000,000; saving in distance from London to Baltic ports about 250 miles.

The Manchester Ship Canal, intended to make Manchester practically a sea-port, was commenced in the fall of 1887. The plan was prepared in 1882, but it took five years of hard fighting against the combined railroad interests to get parliamentary permission. The canal, counting the tidal division from

¹Compare Ship Canals in 1889. By R. E. Perry. Transactions of American Society of Civil Engineers.

Easton to Warrington, twenty miles, will be about 35 miles in length. The bottom width will be 100 feet; depth, 26 feet; surface width, 300 feet. The contract price for the work is \$30,000,000. It will be seen that the largest ocean freighters can be loaded at the docks in Manchester for India and America.

The Cape Cod Canal, which would shorten the route from Boston to ports South from 70 to 140 miles, has been in process of construction for some time—about two miles of it having been finished to a depth of fifteen feet. The Harlem Canal, connecting East and Hudson rivers, was begun in 1888. The Columbia Canal, intended to give Columbia and the Broad River a water outlet to the sea at Charleston, South Carolina, will be five miles long, 10 feet deep and 150 feet wide at the surface. The most difficult portion of it is already finished. The Nicaragua Canal has been so fully discussed of late years that it is only necessary to mention it. It will shorten the commercial water route of the world from 2,000 to 6,000 miles, and the route from our Eastern to Western sea-boards about 8,000.

Among the projected ship canals, some of which will doubtless be carried out in the near future, should be mentioned—in England, the Birmingham, Great Western, New-Castle-on-Tyne, Scotch and Irish Canals, whose combined results would be to make several inland cities sea-ports, and to cut a way for ships across England, Scotland and Ireland.

On the Continent considerable interest has been manifested in a project for a ship canal from the Bay of Biscay to the Mediterranean, and another to connect the North Sea with the Mediterranean, and one **Italy, and another from the Baltic to the**

Black Sea, etc., etc. Brussels will doubtless shortly enlarge her canal to the sea to make it capable of taking in the largest ships.

Among American projects may be mentioned one to secure by a series of canals, beginning with the Cape Cod Canal, an unbroken inland water communication from Boston, New York, Philadelphia, Baltimore, Norfolk to the Carolina sounds. This scheme has important military aspects, and is thoroughly feasible. A project to cut a canal across Florida was started a few years ago, but has not yet got beyond the stage of surveys. A canal across lower Michigan, another across upper Michigan as a complement to St. Mary's Falls Canal and the Michigan Hennepin Canal to connect Lake Michigan with the Mississippi, and a plan for a ship canal from Pittsburg to Lake Erie, are the most important projects which have a prospect of success in the near future.

The proposed canals of an inferior importance for local traffic, and as feeders to rivers, etc., are too numerous to mention, and they are becoming more numerous every decade.

The preceding pages give evidence enough to prove the existence of a growing interest in the canal question. The cause of the revival of interest is as complex as the cause of the decline of the canal in the first place. The prime feature, however, in this revival of interest is the failure of the railroad to realize the expectations entertained of it, as the optimistic faith in its superiority was a prime cause of the decay of the canal. The railroad, in spite of all its improvements, in spite of the enormous reduction in rates for all classes of goods over large

extents of territory, has failed to secure as low rates as the public and shippers, however unreasonably, insist should prevail. The complaints of high charges of transportation are, if anything, keener and more bitter in our own country, where phenomenal rates have been made for heavy long-distance traffic than in any other; and all sorts of experiments in regulation of railroad rates are being tried with little satisfaction to any of the parties concerned—producer, consumer or transporter. Charges of railroad extortion are rife under all systems—American, English, French and German—all testifying to the widespread feeling that railroad rates, for some reason or other, are much higher than is consistent with the public interest.

This feeling was enormously hastened in England by two things: the depression in business following the crisis of 1873, when, owing to the fall of prices and decrease in demand English manufacturers were compelled to canvass carefully all their expenses to see where saving could be made; and when in consequence their eyes were first fairly opened to the enormous rates charged by English railways even on light manufactured goods.

This impression was very much deepened when, as trade began to revive, they found themselves pressed from two directions. Their markets, on the one hand, were cut off by the general reaction in favor of a protective policy in many of the countries where low tariffs had prevailed up to that time, and the consequent increase in competition from domestic producers in those countries put them at a serious disadvantage, notably in the United States. And at the same time they encountered abroad an active

competition along many lines from the manufacturers of Germany and France in places for which they had been almost the sole purveyors before. The situation called for the most serious consideration, and in the deliberations of all committees on the state of the country, notably in those of the Commission on Depression of Trade, the heavy costs of transportation formed a common subject of complaint.

As the most common answer to this complaint was that the railroads were not making an unreasonable rate of profit, the natural course was to raise the question, is there then a cheaper means of transport than the railway?

From this time on it began to be possible again to get a hearing at the bar of public opinion for the artificial waterway as an element in a transportation system.

The first striking fact that gradually attracted the attention it deserved was the relative cheapness of water as compared with rail traffic. Much as rail rates had gone down, water rates had fallen still faster. The ocean steamer was away ahead of the locomotive and train of cars. The cost of moving freight from the manufacturing districts of England to India in 1889 was 22s. 6d., of which 12s. 6d. was absorbed by the railway carriage of forty miles to the seaboard; *i. e.*, it cost fifty-six per cent. of the whole to go one per cent. of the distance; or to put it another way, it cost 125 times as much per mile by rail as by steamer. If it be said that short distances should not be compared with long, then the rates from Chicago to New York may be compared with the rates from the same place to Liverpool.

The published rates in January, 1884, from Chicago to New York—all rail—were, for grain, 30 cents per 100 pounds; from New York to Liverpool, 10.5 additional; *i. e.*, one-third the price for over three times the distance.

The reduction in freight rates by rail from Chicago to New York from 1868 to 1885 was very large; but that in rates by water was much greater, being a fall of about two-thirds in rail and more than four-fifths in water rates. The freight from Chicago to Buffalo by sail vessels during the season of 1885 for corn was, on the average, a trifle less than two cents. Taking the rate at two cents and the distance as 900 miles, this makes a rate of 0.08 of a cent per ton-mile; the average for steamers was 0.1 cent per ton-mile. The cost per ton-mile on the most favored railroad was at least 0.4 cent, or four times the rate by steamer and five times the rate by sailing vessel. It may be safely affirmed, moreover, that improvements in deep water navigation will keep pace with any possible improvement in railway devices or management; that carriage by water, therefore, will be permanently cheaper per ton-mile than by rail.

But ocean travel would naturally be cheaper, not merely because nothing is received for the roadway, but also because, owing to the depth of water, steamers of any size can be used and any rate of speed mechanically possible can be adopted. The capacity of a ship increases enormously with increasing length, width and depth, and the resistance to a high rate of speed is much less in a wide and open channel than in a narrow passageway. All this, therefore, would throw little light on canal traffic, since the roadway costs much at the beginning and

is expensive to keep in order. The size, moreover, is strictly limited, and therefore the speed must be low, both as a matter of economy in the consumption of fuel and of protection to the sides of the canal, which would be much injured by the wash of a high rate of speed. The results of ocean traffic show, however, the enormous possibilities in the water traffic, and the larger and deeper the canals can be made, the cheaper the cost of movement and the higher the rate of speed.

But a consideration of the actual facts of canal transportation, entirely aside from the possibilities revealed by ocean traffic, opened up a new vista of cheap transportation to a generation which had almost lost sight of a most valuable element in the commercial system of the country. The cost of movement, even on the comparatively inefficient canals, now prevalent is extremely low wherever there is a large traffic.

The average rate charged per bushel of grain from Chicago to New York, lake and canal route, was 4.55 cents compared with 14 cents, the rate by the all-rail route.

As an illustration of actual conditions prevailing in this country, the following instances have been selected: The Guthrie Ice Company was engaged for several years in shipping ice from Willow Springs to Chicago by canal—fourteen miles—and from Summit to Chicago by rail—nine miles. The cost per railroad was 50 cents per ton; by canal, 18 cents, the toll being \$5 on each boat carrying 125 tons of ice. The rate per ton-mile on the railroad was 5.55 cents, and on the canal 1.29. The boats were empty one way and the load had to be moved against a cur-

rent of $1\frac{1}{4}$ miles per hour, in a contracted channel having a cross section of only about three times the area of that presented by the loaded boat.¹

The Bodenschatz and Earnshaw Stone Company of Chicago gave the rates at the same date—October, 1886—per cord of stone from their quarries in Lemont to the city, as follows; By rail, \$4.50; by canal, \$1.95. The Excelsior Stone Company gave the rate as \$3.90 and \$1.73 respectively. Coal is carried from Erie to Chicago, nearly 1,000 miles, for 64 cents a ton; thence to the Mississippi River by rail, 200 miles, the cost is \$2, and for the next 100 miles it mounts up to \$4.

[With enlarged canals, constructed on a uniform system, the cost of movement becomes, of course, proportionately less. The original Erie Canal quickly became too small for the traffic, and it was resolved to enlarge it. The improved canal could take boats of 225 tons as compared with 75 tons in the old canal. The greatest size of the old boats was $78\frac{1}{2} \times 14\frac{1}{2} \times 3\frac{1}{2}$, compared with $98 \times 17\frac{1}{2} \times 6\frac{1}{2}$. The length was increased one-fourth, the width one-fifth, and depth nearly doubled, while the carrying capacity of the boat was trebled. The engineers foretold a saving of 50 per cent.; figures showed subsequently that it somewhat exceeded this figure. A similar enlargement now would bring about a similar reduction in cost of transportation.

Another result of the consideration given to the question has been a revelation of the importance still possessed by existing waterways with all their drawbacks. Mr. Marshall Stevens, in a paper before the British Association for the Advancement of Sci-

¹ Compare House Executive Documents, 1886-87, Vol. 23, p. 45.

ence, in their session at Birmingham, states that more fine goods are carried between Manchester and Liverpool upon the Bridgewater Canal than upon the lines of any of the three competing railways, notwithstanding that the rate by water is the same as by rail. The tonnage on the canal amounts to 60,000 tons per mile per year. On the Birmingham Canal, during the recent depressed condition of trade, 7,000,000 tons of goods passed over it in one year. The Weaver has 265 vessels trading on the river, of which 65 are steamers carrying a tonnage of 1,300,000 tons a year in addition to the ordinary canal boats. The whole of the salt taken to Liverpool for shipment, amounting to 800,000 tons, is carried down the Weaver, none being taken by railway. The tonnage carried on the Trent and Mersey Canal, notwithstanding the great number of railways with which it has to compete throughout the whole district which it traverses, amounts to over one and one-quarter million tons a year.

In France the tonnage on the canals and navigable rivers amounts to 19,573,263 tons a year. About one and three-quarter million tons of coal are carried from Belgium to Paris by water. On the canalized port of the Seine the freight carried amounts to nearly three million tons.¹ During the year 1885 the traffic by water to Paris amounted to 4,749,270 tons, carried in 33,878 boats. Of the whole amount of merchandise brought to Paris, 38 per cent. came by water and 62 per cent. by railroad. There are in France nearly 4,660 kilometers of canals in operation. Many of these are so small or extend into regions where there is so little traffic, that they

¹ See *Canals and Inland Navigation*, p. 282.

are insignificant in the commercial system as a whole. The tonnage upon rivers and streams was in 1885, 8,936,291 tons; that on canals, 11,135,166 tons; total, 19,573,263. There were only six canals with over half a million tonnage for that year.¹

There is a very marked tendency of late years to lengthen the average run per ton on the canals, showing the effect of the late improvements. It is interesting to note the classes of goods transported on the canals and rivers. The following table shows the facts for 1885:

	Tons.
1. Combustible materials.....	5,436,212
2. Building materials.....	6,420,537
3. Wood and lumber.....	1,392,703
4. Mining industry.....	1,285,687
5. Agricultural products.....	2,482,998
6. Manufactured products.....	589,262

The importance of the canal is not less in Germany. The relative tonnage of the canals decreased up to 1870 in Germany as elsewhere, but since that time they have not lost ground, but rather gained, and along many of the chief lines they have gained considerably. The tonnage arriving and departing by water rose from an average of 12,749,000 in the forties to an average of 33,337,000 in the seventies, rising to 37,954,000 in 1881. The size of the ships increased from 470 to 888, while the number rose from 48,000 to 71,000 in the period from 1845 to 1875. Of the cargoes in 1881, 60 per cent. consisted of stone, 12 per cent. of lumber, 13.3 per cent. of fuel, 8.5 per cent. of provisions and 5.8 of "store goods." In 1840 the fuel made out 40 per cent. of the whole. As a rule the heavier material shows a

¹ See Block's *Annuaire de L'Economie Politique* for 1888, p. 540, and following.

tendency to seek the canal. The great exception to this is coal.¹

There is a good reason, of course, for this. Coal as a great article of transport in Germany, is of very recent date. The canal system was constructed with reference to another industrial condition. It does not reach into the coal regions, therefore, except accidentally, while the railway owes a large part of its rapid growth to the transport of coal. Besides this, as the great coal regions in Germany are hilly, the cost of making canals through such districts is, of course, relatively high.

The extent to which the canal has managed to hold its own even against the improved and improving railway can be seen from the percentage of the total traffic in Berlin, which is water traffic. In 1869 56.2 per cent. of the total traffic came and went by water; and even as late as 1872 50 per cent. was water traffic. In 1878 the proportion had sunk to 37.8 per cent. All this in spite of the fact that much has been done in Berlin to discourage the water traffic in the last few years. The number of waterways has not been increased of late years at all, being limited to four; while the number of railroads, which was five in 1867, has been increased to eleven. Almost nothing had been done in the way of improving the canals, either by deepening or widening, or providing more loading places, or in any other respect. In 1880 the proportion of grain transported by the canals stood to that transported by rail as 26:29; wood for fuel, as 30:1; flour, as 1:2; stove-coal, as 7:18; stone, almost all by water.

¹ Cf. *Der Wettstreit zwischen Wasserstrassen und Eisenbahnen in Deutschland*. Schmoller's *Jahrbuch*, Vol. viii., p. 251 and following.

In 1887 the waterways had again overtaken the railways in the proportion of 49:45, *i. e.*, a little over 52 per cent. of the traffic was by water—surely a fine record when one considers the enormous improvements in the German railway system in the last twelve years.¹

Along the Rhine and Elbe water traffic has not only held its own, but in some cases even exceeded in its growth that of the railways. This is to be ascribed chiefly to the fact that of late years the system of tug-boats and cable-boats has been introduced very largely. The navigation of the Elbe has increased of late years in a remarkable manner, partly as the consequence of cheaper freight rates and partly as a consequence of the introduction of rapid and regular trips along the river in both directions. This was possible only as a result of the late improvement of the river by the great works undertaken and carried out by the government. The following table shows how rapidly the water traffic has increased at Hamburg:

YEAR.	YEARLY INTERNAL TRAFFIC.		Proportion of Railroad to Water Traffic.
	On the Railroad. Metric hundred wt.	On the Elbe. Metric hundred wt.	
1871-1875	5,412,000	3,274,000	100 to 60.2
1876-1880	11,118,000	6,246,000	100 to 56.4
1879.....	11,203,000	7,053,000	100 to 62.8
1880.....	12,896,000	8,245,000	100 to 64
1881.....	12,765,000	9,266,000	100 to 72.5

¹Statistisches Jahrbuch der Stadt Berlin. R. Boeck, Berlin, 1889.

When it is considered that this represents the total traffic, and that it is simply one waterway against all the railways—many of which, owing to their position, cannot be considered competing routes—one can see how vigorously the canal and river can compete with the railway. An interesting feature about it is that much of the lighter traffic now uses the river instead of the railway. The value of the commodities transported by rail stood to that of those transported by water in 1879 as 100 to 22.7, 1880 as 100 to 26.5, 1881 as 100 to 33.4. The relative number of steamers on the river rose from 10.3 per cent. in 1860 to 28 per cent. in 1880. The average tonnage of the boats rose from 809 to 1,263 metric hundred weight in fifteen years.

The relative growth of river traffic appears in a striking light when compared with the total traffic—railroad and ocean—which has its center at Hamburg. From 1851 to 1860 there arrived annually at Hamburg, by way of the River Elbe, 4,383 boats, with a tonnage of 411,659; in 1887 over eleven thousand arrived, with a tonnage of over 2,000,000, *i. e.*, the traffic increased in twenty-seven years five-fold. In the fifteen years from 1871 to 1886 the percentage of river traffic as compared with total traffic rose from 9 per cent. to 18 per cent., showing a decidedly greater increase of river traffic than of ocean or railroad.¹

Similar phenomena meet us on the Rhine. The reports of the Chamber of Commerce at Mannheim

¹ Compare Schmoller's *Jahrbuch* for 1889, p. 376.

contain some interesting results, summarized in the following table:

AVERAGE FOR YEARS 1875 TO 1881.

WARES.	METRIC HUNDRED WTS.		Per cent. by water.	Per cent. by water at beginning and close of period	
	By Rail.	By Water.		1875.	1881.
Flour	141,000	48,000	25	4	35
Coffee.....	85,000	107,000	56	41	71
Salt.....	19,000	334,000	95	89	98
Soda.....	58,000	26,000	32	23	56
Petroleum.....	138,000	117,000	46	21	61
Coal.....	2,404,000	3,354,000	58	50	69
Stone.....	399,000	244,000	38	19	50

The average, according to value of twenty-five leading articles, rose from 54.5 per cent. to 66 per cent. in the same period, the average for the seven years being 59 per cent.

Mannheim, although an inland city and one of the greatest railroad centres of Germany, had in 1881 a water traffic exceeding the rail traffic by nearly one-half.

The enormous improvements in the inland navigation of Germany have attracted the attention of foreign engineers. Mr. L. F. Vernon-Harcourt, member of English institution of Civil Engineers, attended the Congress on Inland Navigation at Frankfort in 1888. On his return he gave to the Institution of Civil Engineers an account of some things he had seen. At Frankfort itself he found a river traffic of nearly half a million tons in 1888,

which was only 10,000 three or four years before, the river having been improved in the meantime. Of Mannheim he says that the traffic rose from 583,000 tons in 1876 to 1,796,000 tons in 1886, the joint trade of Mannheim and of the port immediately opposite across the Rhine being 2,443,000 tons. The prosperity of Mannheim, he says, exemplifies in a remarkable manner the advantages of extending deep water communication as far into the interior of a country as practicable; and the rapid growth of the river traffic, both at Mannheim and Frankfort, indicate the important position held by those ports which are situated at the extreme limit of large navigations.¹

The importance of the canal as measured by its tonnage is not as great in the United States as in England or France or Germany. This might be naturally expected owing to the fact that there has been a greater development of the railway on the one hand and almost no development of the canal for fifty years on the other. But even here the tonnage of canals, though insignificant in comparison with the railway, reached the handsome figure of over 20,000,000 tons in 1880.

The Erie Canal is even now, after all development of railway lines and in spite of the fact that the State has allowed it at many points to fall into such a condition as to seriously impede traffic, no mean element in the transportation system of New York and of the country at large. As late as 1884 the Erie Canal took half as much grain to New York as all the trunk lines combined, though it is closed for five months in the year.

¹ Minutes of Proceedings of Institution of Civil Engineers, vol xcvi, p. 200.

The importance of a canal to serve as a connecting link between two great systems of water transportation has no better exemplification than the history of the St. Mary's Falls Canal between Lakes Superior and Huron. Opened in 1855, its tonnage began to grow immediately, doubled in three years, doubled again in the next five, more than doubled again in the next ten years, doubled still again in the next ten, doubled again in the next four, nearly doubled again in the next three years. The tonnage has grown as rapidly as the facilities for handling it. It rose from 101,458, registered tonnage, in 1856, to 7,221,935. The actual tonnage exceeded the last amount by nearly 300,000 tons, or an increase of 7,200 per cent. in 33 years. The number of passengers rose from 4,260 to 25,712, though the highest number was attained in 1884, with over 54,000 passengers. When we consider that the canal was only open 234 days, the immensity of the traffic can be better appreciated. The number of vessels passed through in 1889 was 9,579 compared with 1,091 in 1878. Of these, in 1889, 6,507 were steamers. The value of the traffic passing through rose from \$53,413,472 in 1875 to \$83,733,527 in 1889.

Its relative importance may be seen by comparing its traffic with the Suez Canal. The tonnage passed through the latter in 1887 was 5,903,024, or only a little over 80 per cent. of that passing through the St. Mary's Falls in 1889. The ships passing through the Suez Canal are, of course, much larger, and as the canal is open all the year, the number passed through the canal per day is much larger in the St. Mary's Falls. The daily tonnage for 1887 was 18,937 tons, compared with 15,802 in the Suez Canal.

The total tonnage of vessels engaged in the foreign trade—both American and foreign—entering the port of New York in 1887 was 6,074,543 tons, or only 84 per cent. of that passing from Lake Huron to Lake Superior. The estimated saving in freights achieved by this canal, as compared with railroad rates for similar services, is over \$300,000,000.

The Illinois and Michigan Canal, though little more than a ditch, transported nearly 5,000,000 tons of freight during the five years ending in 1885. As this would be a canal of the same general character as the Erie and St. Mary's Falls, *i. e.*, one forming a connecting link between two great systems of transportation, there is little doubt that if it were made a ship canal it would develop an enormous traffic.

The total mileage of railway operated in Pennsylvania for 1888 was 10,802. The total tonnage was 235,145,608, or an average of about 22,000 tons per mile. The total canal mileage was 778, the total tonnage being 7,574,726 tons, or an average of nearly 10,000 tons—this in spite of what one might call a systematic purpose to ruin the canals.

Still another result of the recent consideration given to the canal question has been a recognition of the importance of the canal as a means of regulating railway tariffs. In this respect the experience of the United States has been more important than that of any other country. It is generally agreed by all railway authorities that the only efficient controller of railway rates is the waterways. No efficient control could have been exerted in this direction if it had not been for the Erie Canal. This channel, connecting, as it does, with the ocean, the system

of waterways united with the Great Lakes, exercises a controlling influence on rates over the whole Northern and Western, and even Southern sections of the country. A recent article in the New York *Evening Post* emphasizes the influence exerted in this respect by our great waterways. "Grain may be carried by lake and canal to New York, by coast-wise steamer to Savannah, and thence by rail back to Atlanta, Ga. Thus the rate which can be charged from Chicago direct to Atlanta by rail is limited by the Erie Canal. In truth, there is not a city east of the Mississippi whose rates are not affected by the canal directly or indirectly. The statement that the grain valley of the Mississippi has no natural connection with the Atlantic seaboard is not commercially correct. The Mississippi River, however, is to-day as great a factor in our export trade as though it were crowded with fleets of boats carrying grain to New Orleans. A single boat to the Gulf from St. Louis, if it could carry grain at a rate less than the European rates to the Atlantic coast, would cause a readjustment of east-bound tariffs. Quantity cuts no figure in such a case; the potentiality is enough."

Mr. Albert Fink, one of the ablest railroad managers in the country, has testified on more than one occasion to the far-reaching influence of the Erie Canal on railroad tariffs in the United States. In a letter to Senator Windom in 1878, he expresses himself as follows:

"You are aware, sir, that when the rates are reduced between Chicago and New York, as they are always reduced on account of the opening of the canal, that this reduction applies not only from Chicago, but from all interior cities (St. Louis,

Indianapolis, Cincinnati) to New York. If that were not the rule the result would be that the roads running from those points to Chicago would carry the freight to Chicago from which low water or rail rates would take it to New York and thus leave the through lines from the inland cities without traffic. Hence, Philadelphia, Baltimore and Boston, though they have no direct water competition, get the advantage of reduced rates. The reduction of rates from Chicago and St. Louis to New York, Philadelphia, Baltimore, etc., reduces rates on shipments from those Western points *via* New York and the ocean to Southern Atlantic ports, Norfolk, Wilmington, etc., and from there into the interior, Augusta, Macon, etc. The direct railroads must reduce their rates correspondingly, and thus the Erie Canal determines rates all over the country, including the South, until it reaches a line where low ocean rates from New York to the Gulf cities exercise their influence upon the rates to adjacent interior points."

Other distinguished authorities have maintained that if the Erie Canal did not carry one ton of freight it would be well worth keeping up simply as a regulator of railway rates.

The St. Mary's Falls Canal makes it possible to ship by water from all lake points to Duluth, which is an outlet for the great Northwest. Railroad rates over hundreds of thousands of square miles are now far lower than they would be without the direct and indirect influence of this great waterway.

But even smaller canals have exercised a no less important influence considering their circumstances.

Prominent among them may be mentioned the Illinois and Hennepin Canal—little more than a ditch—which is paralleled throughout almost its entire length by the Chicago, Rock Island and Pacific Railroad. Wherever they touch the same point railroad rates follow canal rates. Thus, from Henry to Chicago—100 miles—the rate is 8 cents per 100 pounds. From Tiskilwa—twelve miles further west but beyond the reach of direct water competition—the rate is 15 cents, or nearly twice as much for twelve miles as for the next hundred.

A striking illustration of the effects of facilities for water transportation on industry is afforded by the history of the Great Kanawah River Improvement. The Great Kanawah Valley, although one of the richest coal districts in the country, had to wait for river improvements before its industries could be adequately developed. The total shipments of coal for the years 1883 to 1887 were in round numbers twenty-nine, thirty, thirty-two and forty-two million bushels. Of these fifteen, eighteen, nineteen and twenty-three million bushels were shipped by river. Most of the coal shipped by rail was intended for points lying beyond the reach of the water route competition. Where it went to lower cities on the Ohio than Cincinnati the rates had to readjust themselves to water rates. The history of this valley showed the reluctance of capital to go to places where it would be cut off entirely from the possibility of water transportation. It shows also how rapidly railroad transportation may grow as the result of a development which would not have been possible without the canal.

We may sum up, then, the result of recent investigation and experience in relation to the canal in the following propositions:

A modernized canal may perform a valuable function in our system of transportation.

In the first place, because it can carry certain kinds of freight more cheaply and more satisfactorily than the railway. Heavy, bulky goods, which do not deteriorate in the time required for transportation by canal can be moved much more cheaply by canal than rail wherever a large traffic exists. This is so amply shown in the preceding pages to be the opinion of competent engineers in all countries that we need not develop the point further here. Again, certain kinds of goods can be carried more satisfactorily by water than by rail, such as worked marble and other commodities which suffer from the jars incident to the smoothest railways.

Such a saving in transportation as may be effected by the canal is of great importance on its own account, as it would render possible the cheaper production of many commodities. But it would be of immensely more value because of the new industries which it would thereby develop. The country is full of immense stores of natural wealth which is only waiting for the possibility of cheap movement to make as great a change in our industry and commerce as was effected by the railway itself. There is no sign that the railway will ever overtake the canal in its possibilities in this respect since improvements in cheapening carriage by water keep full pace with, if they do not exceed, those in rail transportation.

This fact reveals how the canal, far from being a mere competitor of the railway for the traffic nat-

urally most suited to it, is a valuable accessory since by its ability to call into existence new industries whose product would be carried by railways, it can so promote the progress of industry as to increase almost indefinitely the traffic both of itself and of the railway. Experience has shown in more than one case that the railways running right along the length of large canals found their traffic increase as that on the canals increased. The railways along the Erie Canal form classic illustrations of this fact. The instance of the railways running along the Main in Germany, the Rock Island and Pacific in this country along the Hennepin Canal, and many others, might be cited.

The article above mentioned in the *Evening Post*, evidently written by a careful observer, also calls attention to this fact: "The effect of natural and artificial waterways upon railways is usually considered by railway managers to be detrimental, and they have put forth every effort, both in England and here, to control or close all canals. But is this true policy? At first, no doubt, the railroad loses much of its heavy traffic which very likely it has been carrying at comparatively high rates. Some of this loss must be permanent. Very soon the prosperity and growth of the city demands quick transportation, at profitable rates, of manufactured goods and supplies. This is supplemented also by a certain proportion of the heavy traffic, in spite of the canal. The final result is a large traffic; possibly at lower average rates, but yielding fair returns. The railroad has in the end reaped part of the advantage which cheap water transportation gave to the city served by both. The Lake Shore is benefited by the

prosperity of Cleveland and Buffalo, while the New York Central, following the Erie Canal its whole length and forced to conform its real (though not always its nominal) charges to canal competition, finds a succession of flourishing towns and cities whose traffic is the envy of less fortunate roads."

This point has been so fully developed in many able papers by Professor Haupt, of the University of Pennsylvania, that it is not necessary to go into it any further.

But the canal is also valuable in still another way than that indicated above. By taking from the railway certain heavy traffic which costs much to move in time and wear and tear, it frees the railway from a kind of load which interferes seriously with its performance of the sort of work for which it is, technically speaking, best fitted, viz.: That in which speed is the most fundamental requirement. No one who studies the problems of modern society, can doubt that passenger traffic, for example, can be enormously increased, if only cheap and fair transportation can be furnished. The experience of European roads in this direction, working among a people immensely harder to set in motion than our own, gives striking evidence of this fact. Our American railways have done next to nothing to develop systematically the great possibilities of our country in this respect; and one of the reasons is to be found in the fact that the heavy, slow traffic they most rely upon under our present system, interferes so seriously with the fast trains that the latter cannot be put on in the number or quantity necessary to develop the possibilities of this line of traffic. It is a common thing for railroad managers in this country, as well as

elsewhere, to say that they care little for the passenger traffic, they gain nothing from it, etc., when the simple fact is that they have deliberately adopted a policy of reaching out for freight traffic of a kind unsuited to them in such a way as to prevent them from making any fair test of the profit which lies in passenger traffic.¹

A writer in the *Edinburgh Review* of July, 1889, uses strong language in regard to the policy of the English railroads, which in this respect is very similar to that of our own. "In 1845," he says, "the railways departed from their old policy of developing new traffic and began to compete with the canal. In 1848 they bought four canals, in 1846, sixteen.

"For the principle of free traffic, of providing trains as the public filled them and allowing coach, wagon and canal-boat to take such custom as adhered to the old routes, thus providing a sort of automatic filter, admitting none but a lucrative traffic, was substituted the false energy of competition—competition not with the road alone, but between road and parallel lines, and competition with the cheap and useful water carriage of goods that could not afford to pay for rapid transport, by systematic obstruction of those waterways to which England owes so much of her manufacturing and productive wealth. The country has never recovered from this fatal mistake. Inter-railway competition would probably have been but a temporary mischief. But defiance of mechanical law, in forcing on the rail, traffic which could

¹In a paper read in April of the present year before the AMERICAN ACADEMY OF POLITICAL AND SOCIAL SCIENCE at Philadelphia, the author presented a brief review of the result of the Hungarian experiment in developing passenger traffic, which will be found in abstract at the end of this article.

far more cheaply be conveyed by water, has proved a millstone round the necks of English railway proprietors from 1846 to the present day. A mine of wealth lies open to English railway shareholders if their directors and managers will only return to the sound and remunerative policy that produced so steady an increase of percentage on capital down to the year 1844. That policy consisted in providing road and transport for such traffic as sought the railway (without making any efforts of an aggressive nature to drive traffic either from the highways or waterways), and in refusing to carry heavy and low-priced articles of transport at freights which are a robbery of the shareholders."

This is strong language, but not too strong, and applies as fully in this country as in England. Railroad managers, however, are really not to blame for it, since by the very nature of the case they must live more or less from hand to mouth. Each one must look out for his own road, must adapt himself to given conditions. He is naturally more interested in getting the largest earnings for his road during the time of his management than in trying to realize such conditions as will develop a greater traffic in the long run for railroads in general.

It is the general public, the people who are supposed to be the guardians of its interests, its statesmen, law-givers, politicians, editors, etc., who have shown themselves to be lacking in wisdom or probity, and have permitted railroad managers to make their own conditions of competition instead of keeping open the waterways and compelling railway managers to adapt themselves, as they easily could have done, to such conditions as would have secured

in the long run not only the interests of the great public, but even those of the railways themselves.

Take another instance of traffic waiting on the railways. There is an immense business in the line of perishable commodities, lying almost absolutely undeveloped because the railways cannot adjust their business so as to meet the demands of the case. Fresh fruit, milk, meat, vegetables, etc., are the commodities many of our railroads should be carrying instead of stone, iron and coal.

The canal, then, saves cost of transportation, relieves the railway of its most costly and embarrassing traffic, and develops a supplementary traffic which increases railroad business. It does still more. It acts as an automatic regulator of railway tariffs—a most important function in these days, and in such a country as ours, where everything is tending toward consolidation and combination—but no less important in a country like Germany, where the railways have passed practically into the hands of the government, and thus the feeble check on rates is lost which may be found in such competition as is possible. The canal affords a sort of objective standard by which rail rates may be judged, and acts, therefore, as a silent but eloquent warner to railroads not to drive things to extremes. A most interesting proof of this in Germany is afforded by the fact that railway managers, as a whole, oppose, whenever they can, the improvement of rivers or the construction or improvement of canals.

These considerations prove almost beyond a reasonable doubt that it lies in the interest of the country as a whole to secure in some way as extensive water connections as possible along the great lines

of national traffic. The Mississippi River and its tributaries, the great lakes and the ocean should be united so as to constitute one grand system of waterways. Where these connections can be best made is an engineering question on which I should not presume to express an opinion, if extensive surveys had not made tolerably plain the line along which one connection should be made. At least one of these waterways should run from the Northern Mississippi through the great lakes and Erie Canal to the ocean at New York.

A modern canal able to take in the largest boats that could navigate the Upper Mississippi, with all the improvements that belong to modern navigation, would open up boundless possibilities to the whole country. The advantage of such a waterway, while greatest, of course, to the sections most immediately affected, would by no means be limited to them, but would reach the farthest point of the country. It would correspond to all the conditions which modern society considers necessary to a reasonable canal system. It would consist of a series of canals connecting great natural waterways, with termini of an immense commerce, through which, therefore, a great traffic would be sure to pass.

Such water connections should, then, be secured in some way. If private enterprise and capital will do it under conditions which will conserve the interest of the public, let private enterprise and capital do it. If not, let the States do it; if they will not, then let the nation do it, for it is, after all, a national question and national interests are at stake.

The question may be raised as to how the funds shall be provided. Reasonable tolls would provide

an ample revenue, if the canals were really constructed on a proper scale. Ship canals joining the Mississippi and Lake Michigan and Lake Ontario and the ocean would develop a traffic far exceeding that of the Suez Canal, even in proportion to its length, and a very moderate system of tolls would pay interest and expenses. For this statement there is ample proof in the reports of engineers on the subject.

But even if this were not so, even if the government should have to construct and operate them at a loss, or even free of charge to the traffic moving upon it, the return to the country at large would be such as to repay the cost to the country many times over.

It is safe to say that no system of highways—land or water—adequate to the demands of modern civilization could ever be constructed and kept open if each individual portion of it were to depend for its existence on the tolls taken upon it for traffic passing over it. Imagine for a moment the result if we were to attempt to take tolls upon each mile, or even each ten miles, of wagon road in this country, sufficient to pay for laying it out and keeping it in order. The result would be the closing of much over 50 per cent. of the length of highways in the country, a consequent checking of the rate of progress and possibly a permanent tendency to a retrogressive movement. Freedom of locomotion is an absolute necessity of civilization, and the more it can be secured—not merely as a possibility but as an actual fact—the more rapidly, *ceteris paribus*, will civilization advance. The advantage of a system of highways, whether on land or water, is not to be judged, even

from a narrow commercial point of view, by the possibility of collecting tolls enough on it to pay for constructing or maintaining it, but by its general effect on the commercial and industrial progress of the country; and, judged from this point of view, there can be but little doubt that it would pay the nation well to open such a waterway from the Mississippi to the seaboard, at least along the line indicated, and perhaps in other places also.

There are probably other lines than these, at more places than one in the country, which should be taken in hand by the Federal Government, and certainly there are many which the States themselves should undertake on their own account. There should in some instances be a decided effort to regain control of certain canals before the railroads succeed in ruining them altogether. In others the State should keep control of the canals it owns, and far from proposing to sell or give them away, it should reconstruct them so as to make them able to meet modern demands. New canals may doubtless be profitably constructed in many places where they do not exist; but the first point is to hold on to existing canals until it is perfectly clear that they have no valuable function to perform in our transportation system.

Another type of canal which is now much coming into favor is that which brings home to a city, hitherto without them, the facilities of a seaboard city. The Manchester Ship Canal is an excellent example of such a type. Bremen, Brussels, Paris, Birmingham and other cities propose to construct such waterways. There are large possibilities in this country for such canals, and the future will doubtless see many such constructed.

Whatever one may think of the particular proposition of the foregoing paper, it is difficult to believe, in view of all the facts relating to the question, that the American people will not soon awake to the importance of the artificial waterway, and when they do they will give as careful attention to its development as they did sixty years ago, or as they have been giving to the railroad for sixty years past.

NOTE A.

A NEW SYSTEM OF PASSENGER FARES.

THE LETTER POSTAGE PRINCIPLE APPLIED TO RAILROAD PASSENGER TRAFFIC.

*[Abstract of a paper read by Professor Edmund J. James,
of the University of Pennsylvania, before the American
Academy of Political and Social Science, Philadelphia.]*

For the last nine months a most interesting experiment in railroad management has been going on in Hungary. The railroad managers in Hungary, and more particularly the Minister of Commerce, became convinced some time ago that a great reduction in passenger fares would have to be made. The passenger traffic in Hungary had remained under the prevailing system of management almost stationary for some time, and was far behind that of Germany and the other leading countries of Europe. It appeared necessary, therefore, to do something to develop travel, if possible.

As a result, a new system of passenger tariffs was worked out and put into operation on the first of August, 1889. The method adopted was that commonly known as the zone-tariff system, in which the rates are fixed, not according to the number of miles traveled by the passenger, but according to the num-

ber of zones traversed or entered upon during the journey. Starting from a given centre, the railroads are divided into fourteen zones or stretches. The first zone includes all stations within 25 kilometers of the centre; the second, all more than 25 and less than 40; the third, all between 40 and 55 kilometers, etc., each zone after the first up to the twelfth, being 15 kilometers long, or as we should perhaps better say wide. The twelfth and thirteenth zones are 25 kilometers wide, and the fourteenth includes all stations more than 225 kilometers away from the capital. Tickets are sold by zones, being good for all stations within the zone.

Two grades of local tickets were adopted, the first being to the first station and the second to the second. The third station comes within the zone ticket.

A normal fare was adopted per zone (taking 40 cents as the gulden) of 20, 16 and 10 cents per zone according to the class one uses—first, second or third. The fare for any zone up to the twelfth is found by simply multiplying the number of the zone into this normal rate. The fare for stations in the thirteenth zone is fourteen times the normal rate, except for the second class, in which case it is a trifle less. The fare for stations in the fourteenth zone, which includes all stations more than 225 kilometers, is sixteen times the normal rate, with the exception of second-class fare again, which is a trifle less. This system, as will be shown in a moment, introduced a great reduction in the average fare, and an enormous reduction in the long distance fare.

change this system implies, for a
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greatest. The fare for all stations in the fourteenth zone, which, as above said, includes all stations more than 225 kilometers from the capital, are 8, 5.80 and 4 gulden respectively for the three classes, corresponding to \$3.20, \$2.32 and \$1.60. The greatest distance which can be traveled for this sum is 731 kilometers, or 457 miles, making the rate per mile from Buda Pesth, for example, to Kronstadt 70, 51 and 36-100ths of a cent for the three classes respectively. If we had the same rate in this country it would be possible to buy a railroad ticket to Chicago from New York for \$3.10. The fare from New York to Philadelphia would be 32 cents.

The above is, of course, the extreme rate at one end, but the extreme rate at the other end of the same zone is still a great reduction on old rates in Hungary, as will be shown in a moment. It represents also a much lower rate than we have anywhere in this country. The station at the limit of the zone nearest to the starting point would, of course, be 225 kilometers, about 140 miles. The rates to this being the same as to the farthest one away are only 2.2, 1.7 and 1.1 cent a mile for the three classes. If we count the extreme distance within the other zones running backward from the fourteenth, we shall find the rates to be about 1.7, 1.1 and .6 of a cent a mile, which are far below anything which we can show in the way of low rates for such distances.

The reduction, as compared with the old rates, is enormous. The old rates from Buda Pesth to Kronstadt were 44, 31 and 22 gulden; the new are 8, 5.8 and 4, a reduction of 82 per cent. This represents the extreme reduction, the per cent. of reduction growing smaller as you go nearer to the starting point. At Klausenburg the old rates

were 24, 17 and 12, as compared with the rates just given, the distance being 400 kilometers, a reduction of 66½ per cent. At Medzo Telegd, a distance of 271, the reduction is still more than 50 per cent., and at 100 kilometers the reduction is still nearly 50 per cent., while local reductions have also been very considerable.

The simplification of the tariff is very great. Under the old system the number of distinct tickets which had to be kept in every large office was nearly 700. It is now only 92.

The railroad tickets are now placed on sale like postage stamps at the postoffices, hotels, cigar shops and other convenient places. The public is greatly pleased at the discarding of the complicated machinery of ticket selling as practiced under the old system.

The most interesting thing, however, in this experiment, is the way in which the passenger traffic has increased under the stimulus of the new rates. The time is too short to enable us to draw definite conclusions, but the facts are striking and significant. The number of passengers during the last five months of 1887 was 2,389,400; during the same period of 1888 was 2,381,200, while for the same period of 1889—the first period under the new system—it was 5,584,600, an increase of over 133 per cent.¹ The receipts from the traffic under the new

¹ According to the latest report brought down to March 31, 1890, the traffic on the state railways had increased to 7,770,876 as compared with 2,891,332 in the corresponding period before the introduction of the zone tariff, an increase of 169 per cent. The result is still more remarkable with regard to traffic between neighboring stations. Whereas under the old system only 255,000 persons used ~~save~~ for such journeys, their number rose during the above 7,586. It is reported that the government con-
• reduction.

system were over 18 per cent. greater than under the old, while the operating expenses under the new system were not greater than under the old. In other words, passenger traffic will respond to lower rates, a thing which some railroad managers have denied.

Hungary was in some respects the most unfavorable country in Western Europe for such an experiment. It has relatively a small population, scattered over a large territory, poor, ignorant, conservative, the kind of a population not likely to respond quickly to such a thing as a reduction in long-distance railroad fares. The success of the experiment has fixed the attention of railway managers on the Continent. Austria is about to adopt a somewhat similar system. French, Belgian and German engineers are going to Hungary to study the system on the spot.

It would be well for our own railroad managers, who complain that passenger traffic is not profitable, to look into the matter. The American people, reputed to be the most restless in the world, does not have nearly as many passengers per head of the population as England, and it is far exceeded in the number of passengers to mile of railway by half a dozen countries of Europe. This is the result of our peculiar economic conditions in great part. It is also to some extent due to the fact that our railroads have never given anything like the same attention to developing passenger traffic as they have to freight traffic. The example of Hungary is of special value to us because its economic conditions are in many respects similar to our own, and because the railways involved in the experiment are to a large extent private and not State railways.

CANALS
AND THEIR
ECONOMIC RELATION TO
TRANSPORTATION.

BY

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Canals and Their Economic Relation to Transportation.

BY LEWIS M. HAUPT, A. M., C. E.,

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The science of Engineering is pre-eminently one of economics. Most of the problems arising in practice involve the adaptation of the means to the end, in the most judicious manner. The question which invariably presents itself to the engineer is, how to obtain the best result at the least cost of construction and maintenance. This is a complicated problem not to be solved solely by the aid of formulæ or mathematics, although they are important auxiliaries, but largely by experience, precedents and good judgment. It includes also a careful weighing of the relations of cause and effect, action and reaction, revenue and expense, which are functions of many variables; but the physical elements of the problem may be readily reduced to finding the *locus of the line of least resistance*, which will, in general, be that of least cost and greatest revenue. Such is in substance the task submitted to the projector of a new line of communication.

He is to seek out the location which will cost the least, be most direct, produce the minimum of mechanical resistances, develop the maximum amount of traffic at paying rates and cost the least to main-

tain and operate. Here too the question of time, or velocity of transit, enters as an important factor, not to be overlooked.

The more closely the solution may be made to comply with these conditions the better will be the result; hence it becomes necessary to consider the character of the physical resistances to be surmounted in selecting such a line, in connection with the kind of traffic, motive power, speed and cost of movement.

The principal resistance to be overcome is that produced by the force of gravity acting upon a body moving over an inclined plane. If the direction of the movement be downward, the effect of the force is to produce an acceleration—thus diminishing the amount of any auxiliary power which may be required to propel the load; if upward, a retardation ensues and a consequent increase of power will be required. It has therefore become a maxim in transportation that the grades should be with the heavier traffic.

Since flowing water naturally seeks the line of least resistance and will not run up hill, it is but rational to find the rivers utilized, so far as their variable stages will permit, for purposes of traffic as well as for water supply and power;—but the channel being sinuous, and not often lying in the direction of the desired movement, artificial canals were soon cut for the purpose of still further adapting this natural roadway to the wants of mankind.

Moreover, the frictional resistances of a solid passing over or through a fluid and the great superiority of the latter as to continuity and smoothness, over a roadbed of any solid material, are advantages which artificial constructions can hope to rival, and may an inherent element of cheap-

ness which cannot be excelled. If therefore the terminals of a line can be connected by water at a cost even greater than that required for rail, it would seem to be the logical and proper channel of transportation. Here, however, arises one of the difficulties, for the applicability of the water route is restricted to relatively narrow limits by the topography as well as the metrology of the country, whilst the railway possesses almost unlimited range in both vertical and horizontal directions, and there are no obstacles which it may not either surmount or pierce.

Where water is abundant, however, the vertical range of a canal may be greatly extended by the use of locks, thus rendering it practicable even in hilly sections, and there are very extensive areas in the United States where it would only be necessary to open what might be regarded as an irrigating ditch, without locks, to provide the necessary communications as feeders to trunk lines for a large proportion of the population in the great basin of the Mississippi and its tributaries.

The great flexibility of the railway system, enabling it to ramify into all parts of the terrane, has resulted in the enormous development of 158,000 miles in about half a century, in the United States alone, and has caused the superior advantages of the water way to be either overlooked or ignored. A reason for this may be found doubtless in the fact that the general government claims jurisdiction over the improvement of all navigable waters not lying wholly within states, and hence it is difficult if not impossible, for corporate powers to execute any works which would look to their amelioration or utilization without first

securing the consent of Congress, which, in many cases, involves a serious loss of time, with great uncertainty as to the result.

So long as the policy of "here a little and there a little" exists, nothing can be expected for a rational and systematic development of these natural channels of commerce, and the attention of economists interested in the cheapening of transportation, and in the enriching of the country by encouraging mining, manufactures, agriculture, and all those industries which are dependent upon the movement of materials or products, must be restricted to the development of such artificial water ways as may be practicable, and give fair promise of returns.

Here again the field is greatly restricted by a policy of railroad companies, which has resulted in many cases in the roads purchasing the control of existing canals in competition with their lines, under the impression that such canals were injuring their business. It was found to be an indisputable fact that the cost of movement by canal was less than that by rail, and hence the determination to exterminate or control the former. The result is that the producer must pay the increased rail tariff to the railroad company, while the volume of the movement is largely decreased, for many articles which before had a market value at the lower rate are now rendered worthless.

Nevertheless the competition with the few surviving canals and with other railroads has compelled the managers of these lines to seek every possible method of reducing expenses and of lessening the tariffs so as to approximate to those by water carriage, but even yet they are still in excess of the rates by these artificial channels.

The most recent movement in the direction of economy over land is the large increase of carrying capacity of the rolling stock whereby the ratio of live to dead load is about doubled, being now nearly or occasionally fully two to one. If there be no back loading it is equivalent to one to one for the round trip, other things being equal. But this increase of rolling load involves additional expenditures for road-bed and maintenance, thus adding to the capitalization. Still the great reductions effected, at the present time, by the most thorough system and rigid economy, are not yet able to bring the cost of movement by rail within reach of that by canal. If the comparison be made with deep draught vessels on rivers, lakes, or the ocean, the results are far more unfavorable for the railroads.

Thus if the cost of transportation on the Erie canal be taken as a basis, there will result the following values :

Cost by canal per ton per mile.....	less than 3.0 mills.
Cost by lake, 14 to 16 feet draught.....	1.2 “
Cost by ocean, 25 feet draught.....	0.5 “

If the canal boat depth be taken at five feet, that of the lake propellor at fifteen, and that of the ocean “tramp” at twenty-five, their ratios will be as one to three, to five. The reciprocals of these numbers are one, one-third and one-fifth, or 1, 0.33 and 0.20 ; while the relative rates reduced to the unit as a standard would be one, something more than 0.40 and a little over 0.17, varying with the canal rate per ton per mile.

By comparing these figures it will be seen that at these rates, they are so nearly coincident as practically to be stated in the form of a law, viz : *The cost*

of movement on water is inversely proportional to the draught of the vessel. It is true that we are here comparing artificial and natural waterways, but as this canal is the enlarged Erie, and free of tolls, the cost will not differ very greatly from an improved river navigation of equal draught.

These results demonstrate the great economy of increased draught, and furnish a clue to the reason for the abandonment or failure of many of the early canals as constructed in the first three decades of this century with their insufficient depths and limited capacity.

To obtain increased draught, it may be urged that the prism of excavation for a given length of canal must increase as the square of the depth, whilst the cost of movement only varies inversely as the first power. But the capital invested in construction is only one factor in the cost of operation, and the length of the boat may be increased without adding materially to the resistance which it generates in passing through the water. If the beam be also widened proportionately the capacity of the boat may be made to increase as the cube of the depth, while the cost of construction will vary as a fraction of its second power.

With this view of the subject it will certainly merit the attentive consideration of traffic managers, as well as consumers and producers who are so vitally affected by the tariffs on freight.

Again, if it be true, and there would seem to be little room for doubt, that on a well appointed and well managed canal the *cost* of traffic is less than on a standard railroad, why should not the managers of such roads, who may at the same time control a

parallel line of canals, transport a large portion of the lower grade freights via the water way with the same profit to the shareholders and a greater benefit to themselves and the producers due to the lesser tariff? Such a policy has invariably resulted in augmenting the business and increasing the profits; and it is difficult to understand why it should not be more generally realized and adopted.

In an argument before the Committee on Commerce, several years since, Mr. Albert Fink, then the railroad Commissioner of the Trunk Lines, stated :

“The competitive railroad tariffs for the interstate commerce are not, as is so generally supposed, under the absolute control of railroad managers, but the carriers by the water routes really establish these tariffs, and the railroad managers have nothing to do but to conform to them. The water routes not only control the tariffs of these immediate railroad competitors, at points where they can render like service to the same people, but their influence reaches directly and indirectly to the remotest parts of the country. * * * It will thus appear that the railroad companies fully recognize the potent influence of water competition and are not at all afraid of it, but on the contrary, they have met it and must meet it wherever they find it, without complaint and as one of the inevitable conditions under which they have to struggle for existence.”

It would seem however, that the railroads have in consequence of this effect, conceived a natural animosity to the canals, and the result has been a war of extermination, and that the object of the railroad managers in acquiring possession of the canals is not to improve or utilize to the greatest extent the capacity of the latter, but to eliminate it from the field as a competitor.

At this time, too, when it is credibly reported that an organization has been formed of the railroads west of Chicago for the purpose of defeating the proposed enlargement of the Illinois and Michigan Canal, so as

to render it navigable for vessels of greater draught, it is particularly appropriate to recall the words of Ex-Senator Windom, (now Secretary of the Treasury) then chairman of the Committee on Transportation to the Seaboard. In addressing the Senate, on June 10th, 1878, during the consideration of the bill "making appropriations for the construction, repair and preservation and completion of certain public works on rivers and harbors," he said :

"The chief instrumentalities by means of which these (competitive) forces will exert their power are the Mississippi river on the one side and the Northern water routes on the other. * * * Both routes constitute indispensable parts of one grand system. * * * Each is needed to regulate the other, and both as regulators of railway charges. Each has some advantages which the other lacks and some impediment which the other has not ; but on the whole their trade forces, commercial facilities and economic capacity for cheap transportation will be so evenly balanced as to insure a healthy, active and permanent competition. It will be as impossible for them (the railroads) to combine to put up prices as to effect a combination of interests between Chicago and St. Louis or New York and New Orleans. The interests of the lines themselves are necessarily antagonistic, and as each will be an open, free highway to everybody who chooses to float a vessel upon its waters, combination will be simply impossible and competition the inevitable law of their existence. But the competitive power and influence of the two great contestants (the water and the railroad lines) will not be limited to any one locality, but will extend to nearly every State in the Union, and will hold in check and regulate the charges on every railroad from the interior to the seaboard. The wide sweep of competitive influence exerted by the Erie canal is not generally understood or appreciated. You would doubtless be surprised, Mr. President, if I told you that the 'little ditch' which runs through your State holds in check and regulates nearly every leading railroad east of the Mississippi river, and that it exerts a marked influence on the cost of transportation over all the country extending from the interior of the Gulf States to the St. Lawrence river, and from the great plains of the eastern foothills of the Rocky Mountains to the Atlantic Ocean. And yet such is the fact."

This generalization is then followed by extensive quotations from Mr. Albert Fink, in support of these statements, to the effect that—

“The Erie Canal and the lakes exercise their influence over the Southern country until it reaches a line where low ocean rates from New York to the Gulf States—Mobile, New Orleans and Galveston—exercises their influence upon the rates to the adjacent interior points—to Augusta, Macon, Selma, Montgomery, Houston, &c.—so that it may be said that the all-rail rates are kept in check by water transportation. There need be no fear that extortionate rates will be charged by railroad companies; on the contrary, the fear is that water competition will be so effective as to prevent railroads from securing paying rates.”

The closing sentence reveals the reason for the policy of the railroads and shows how vital it may be for a railroad in competition with a canal to gain control of the latter; but not, we think, for the purpose of exterminating or abandoning it. Rather let us say as an important and useful auxiliary whereby the revenues of the railroad may be augmented without taxing the public to maintain the higher railroad rate.

It is a well remembered fact that after the enlargement of the Schuylkill canal in 1846, the charge per ton on coal from Pottsville to Philadelphia, about one hundred and six miles, was forty cents for toll and fifty for freight, making a total of ninety cents; whereas now, since the canal has been acquired by the Philadelphia and Reading Railroad Company, the charges are the same as those by rail, or one hundred and seventy cents for the same service. Thus nearly one hundred per cent. is paid by the consumers, unnecessarily, and the price of all articles manufactured from this coal is increased accordingly.

At the old rate of nine mills per ton per mile there was a large margin for profit on the canal, and at

this same rate, with the exceptional facilities possessed by this down-grade railroad, there should still be a handsome profit. Yet the competition being destroyed, the policy of charging "what the traffic will bear" is too great to be resisted, and industries are stifled.

In an able article on American Industrial Progress, the London Engineering of July 5, 1889, says, after quoting the statistics of our material growth, as evinced in the increase of agricultural products :

"Under every heading there has been an enormous expansion of business, accompanied in the majority of cases by a considerable fall in values." * * * "In other words 2,660,000,000 bushels in 1887 were worth less than 1,330,000,000 bushels twenty years before."

"This very striking decline of prices has been due no doubt to better systems of cultivation, and to economy in many directions, but it has been chiefly caused by the reductions that have taken place in the cost of transport and the facilities that have been provided throughout the United States for the distribution and consequent equalization of prices of the products of agriculture generally. * * While in 1860 there were only 30,626 miles of railroad, and in 1870, 52,865, in 1888 the mileage had expanded to 157,000; but the increase in traffic has been phenomenal, and is closely allied to the remarkable reduction in the rates of freight that has taken place within recent years. We find for example, that in 1868 the average freight charge on the eighteen principal railroad lines of the United States was 2.453 cents per ton per mile. But in 1878 it was only 1.401, being a reduction of 42 per cent. In 1878 there were many who believed that there was no further room for reduction of freight rates, yet we find that in 1887 the average ton-mile rate on the same roads was only .974 cents, or a further reduction of 30 per cent. In 1887 the great bulk of the freight carried on the railroads of the United States was taken at 60 per cent. less than in 1868. This remarkable movement has been the life's blood of the industrial and commercial development that has occurred in the interval. The freight earnings have kept up and they amounted to over \$636,500,000 in 1887 as compared with 294,500,000 in 1871, and the net earnings within the same period have advanced from \$141,750,000 to 335,000,000. Obviously if the rates of twenty, or even ten years ago had been kept up to the present time, the relative net earnings would probably have been ~~less~~ ^{hi} ~~would have been~~ ^{amounted to} infinitely less. The ⁷ amounted to 552,000,000 tons of

A similar development has taken place in the mineral industries of the United States, due to the increased facilities for distribution. The basis of mineral wealth is coal, and it is scattered through twenty-eight states and territories. In 1870, less than 33,000,000 tons were mined in the nineteen states in which it was then known to exist, while in 1887 the output had increased to 111,000,000 tons. But this is only one of the forces taken from the storehouse of a beneficent Creator. Another remarkable development is to be noted in the case of natural gas, which was almost unknown but a decade ago, while in 1887 it represented over \$16,000,000. The existence and production of petroleum have also largely increased. Within a few years the consumption of copper has doubled, whilst iron and steel have kept pace with coal and other fuels.

These magnificent results are, to a great extent directly due to the reduction in the tariffs charged by the transportation companies, which, as has been shown, are regulated by the rates fixed by the water ways ; and yet they are not as low as they may be, for it is manifest there is still a large profitable margin on the rates for freight in bulk by canals of enlarged capacity, which might be utilized for the public benefit and the further extension of the market range of our manufactured articles, in the trade of the world.

The importance of ship canals and their utility in shortening the commercial routes of the world is universally conceded, yet there are other canals, purely local in their functions, which carry a larger business than even that at Suez. For example, the Sault Ste Mary Canal, which was recently enlarged to accom-

moderate the rapidly increasing commerce of the Lake Superior region, and which in consequence of its latitude is closed nearly fifty per cent. of the time, has outstripped its oriental competitor in the volume of its tonnage—and it is again too small to handle the rapidly increasing traffic.

In 1870, when the Suez canal was opened, the number of vessels in transit was 486, the net tonnage 436,609, and the average toll per ton \$1.99. In 1888, the corresponding figures were 3,440 vessels, 6,640,834 tons, and \$1.89 per ton toll. The gross receipts from tolls were \$12,607,524.00. The canal is open all the year.

From 1881, when the Sault canal was enlarged, to 1888 inclusive, it was open an average of 193 days of each year, or fifty-three per cent. of the time. The number of vessels increased in the nine years from 1881 to 1889, from 3,304 to 8,832, the net tonnage from 1,802,571 to 6,932,203, and the operating expenses per ton have fallen from 12 mills in 1882, to 5 mills in 1888. In 1889 the net tonnage was 7,516,022, and the number of vessels 9,579.

Per contra we find at the other end of this chain of great lakes, the Erie canal, on which the amount of traffic has remained remarkably constant for fifteen years, fluctuating at about five million tons.

The increase of tonnage is carried by the railways, and it has expanded to the enormous amount of 35,000,000 tons, which, it is safe to assert, would still be in the distant future had it not been for the existence and silent, yet potent, influence of this artificial water way, which has inspired competition and controlled rates. Yet this is the friend which the railways desire to strangle upon the plea that its days

of usefulness are over. Such a result would be a calamity to the country. On the contrary, the beneficial influence of this western water way should be extended as rapidly as possible in both directions,—by the National Government completing the “Great Belt” route from the Mississippi to the Atlantic, and along the coast by the inner line, so frequently described, to Florida, as a measure of national, commercial development and defence. It should be the first step in the defensive measures adopted by Congress, for it is of little use to build vessels to run a blockade and take the risks of storms, on the open ocean, when far greater mobility and safety may be secured inside of the coast line.

But there is another strong reason why the enlargement of the link between New York and Philadelphia, via the Delaware and Raritan Canal, upon a revised location, should not be longer delayed. It would still further increase the facilities existing between the two largest and most populous cities of the country, and would affect directly the local interests of at least five millions of people, and indirectly the welfare of sixty millions.

Possibly it is because of the maxim, “what is everybody’s business is nobody’s business,” that this work has not long since been undertaken, and yet it would seem to be in accordance with the history of many similar works in this country which are limited to the confines of a single state, that they are left to the enterprise and resources of said state to be executed.

What shall be thought of the commercial activity and energy of Americans, when so important an undertaking languishes for a century, while Englishmen do not hesitate to undertake a work of greater

magnitude with smaller prospects of returns in the construction of the Manchester Ship Canal, thirty-five miles long, at a cost of a million dollars per mile, and between cities having populations of only 575,000 and 350,000 respectively?

All the railroads intercepted by the English canal, and which opposed its franchises, are now compelled to modify their location and grades so as to surmount an elevation of seventy-five feet in the clear above the water surface of this canal. The total amount of excavation for this work amounts to over 44,000,000 cubic yards, which must be removed prior to January 1, 1892. The contract was let in January, 1888, and already considerably more than half of the excavation is completed. Exclusive of right of way and terminals, this work has been let in one contract for \$22,500,000. Yet there has been no lack of railroad and even canal facilities. Then where shall we look for justification for this enormous expense? It is to be found merely in the desire to avoid the transshipment or break of bulk at Liverpool, and to provide for a continuation of the voyage 35 miles further by water, at canal rates, into the interior. This channel is to be 26 feet deep and 120 feet wide.

There are some remarkable phases connected with the history of this Delaware and Raritan link of the internal water way, which are full of instruction and suggestion. It is only necessary to review the annual balances, to note the great fluctuations in net returns which have taken place, and when these results are connected with the dates of changes of administration, the effect of the policy of the managers becomes at once remarkably prominent.

The chronology of the important changes is given herewith that the relation of cause and effect may be more readily discerned.

The Delaware and Raritan Canal Company and the Camden and Amboy Railroad Company were both chartered in February, 1830 ; the former to construct a canal to connect the Delaware river at Bordentown with the Raritan at New Brunswick, a distance of 44 miles ; the latter, to connect Camden with Amboy by a railroad across the state of New Jersey. These two companies were consolidated by an act passed in February, 1831, and were thereafter conducted by a single management. The main lines of the railroad and of the canal were both completed in the year 1834, and the branches in 1838. In the meantime the Philadelphia and Trenton Railroad Company was chartered, and in 1836 it was merged into the United Companies by the purchase, by them, of a controlling interest in its stock. At the other end of the route to New York, the New Jersey Railroad and Transportation Company was operating an independent link between New Brunswick and Jersey City, in opposition to the steamers from Amboy to New York, and to extinguish this rivalry an agreement was made in January, 1867, between this company and the others already united, whereby it entered the combination on condition of an equal division of profits between these four companies, viz.: the Delaware and Raritan Canal Company, the Camden and Amboy Railroad, the New Jersey Railroad and the Philadelphia and Trenton Railroad Companies—thus forming the United Companies of New Jersey.

In his annual message to the stockholders in 1870, the President of the Pennsylvania Railroad Company

called attention to the desirability of securing a through line to New York, by the lease of the lines of these United Companies, and in June of 1871 this lease was consummated, and the entire property was secured for a period of 999 years for an annual rental of ten per centum guaranteed on the aggregate capital and dividends to an equal extent on the Philadelphia and Trenton Railroad.

There is a bit of unwritten history connected with this transaction which is well authenticated, and which serves to explain to some extent the subsequent events relating to this important line of traffic. When it was learned that this lease was contemplated, the President of the Philadelphia and Reading Railroad also entered the field as a competitor for the use of the canal through which that company was then shipping nearly two million tons of coal per annum.

To avoid complications from competitive bids, an alleged agent made an agreement with the Philadelphia and Reading Railroad whereby the use of the canal was assured to that company on satisfactory terms, provided they would withhold their bid. This they did, and, as the story goes, after the lease was effected, it was found that the agent so-called, was acting without authority, and the trade of the Philadelphia and Reading Railroad Company was soon after driven from the canal. Thus was killed the goose that laid the golden egg. This outlet by the canal to New York being thus cut off, the P. & R. R. Co. a few years later, or in May, 1879, succeeded in effecting a lease with the North Pennsylvania and the Delaware and Bound Brook Railroads, and thus opened up a new competitive route to New York by rail. The colliers were put on in 1869 to carry coal

via the river and ocean to eastern and southern ports. The Central Railroad of New Jersey was also leased May 29, 1883, for 999 years, but this lease was surrendered January 1, 1887.

As the sequel will show, the loss of this heavy coal tonnage was a serious matter for the canal and the United Companies, but when great transportation corporations cross swords, the stockholders as well as the public must bear the brunt of the conflict.

An examination of the balances of the Delaware and Raritan Canal Company, hereto appended, show a remarkable curve of fluctuations. There is a rapid increase of profits up to the year 1866, when the net revenue reached a maximum of \$933,642.86 over and above the gross expenses, which were only \$360,513.83. In other words the profits were nearly three hundred per cent. of the operating expenses—truly a magnificent showing.

The traffic through the canal, so far as it can be determined from the incomplete tables accessible, was larger this year than any other. From this time the net returns are found to decrease to date—reaching a minimum in 1887, when they were reported as only \$80,059.91. But this does not represent the true condition of affairs, for from the time of leasing the United Companies of New Jersey, the Pennsylvania Railroad Company guaranteed ten per cent. on the capital stock of the several companies, and at that time the canal capital was valued at \$5,847,400, making a fixed charge of \$584,740.00 to be paid annually. It will be seen that after the date of the lease there were but two years when the balance exceeded this amount. Hence, it is said “the canal does not pay” and its traffic is allowed to fall into decay. The

same is true, but to a much greater extent, as to the deficit on the railroads, and the annual reports of the Pennsylvania Railroad will show a loss on these United lines reaching, in some years, the large amount of over one million dollars. But this is the price the company elected to pay for the privilege of shipping its traffic at the Jersey City and other termini, instead of at Philadelphia ; and there are possibly compensating advantages which do not appear on the balance sheets of this part of the route.

It is difficult to understand why the more bulky, inferior freights are not transported via the river and canal as formerly, instead of by the more expensive rail routes, even if the charges by canal be kept, by the management, the same as those by rail ; for the cost of the movement being less, the profits would be increased and a large part of the rolling stock of the railroads would thus be released for use on the western branches where there is great dearth of cars. It would, it is believed, be still better if the capacity of the canal were enlarged and its alignment rectified, thereby shortening the distance, about six miles, and thus promoting an additional traffic between Philadelphia, New York and other cities by these additional facilities.

Either this, or else let the canal be sold to the United States and be improved by it as a part of the internal water way to be made free as the rivers. Thus the railroad would eliminate an annual deficit of over half a million dollars and the country be greatly benefitted. It will be presumed that this free water line would be detrimental to the railroad interests, but paradoxical as it may seem, the results are generally the other way, and the existence of a

free navigable channel is found to be beneficial to the railroads bordering its banks. The reason is manifest. Population is more dense where there are facilities and an independent outlet, and population is the life of trade.

The canal balances, so far as they could conveniently be ascertained, are shown in the annexed tables :

	Expenses.	Receipts.	Profits.	Inc. or Dec. over previous years.
1852	\$132,048.43	\$376,585.11	\$244,536.68	189,450.63
1859	157,068.66	492,198.00	335,129.34	
1860 ²	117,968.86	546,650.59	428,681.73	
1861 ¹	157,509.53 ¹	469,895.73	312,386.20	
1862 ⁴	172,091.80	517,655.63	345,563.83	
1863 ⁵	190,883.89	728,365.73	537,481.84	
1864 ⁶	280,390.29	1,065,024.26	784,633.97	
1865 ⁷	317,577.75	1,128,007.30	810,429.65	
1866	360,513.83	1,294,156.69	933,642.86	
1 yr. missing				
1868	325,560.56	912,107.77	586,547.21	
1869	311,681.86	1,043,865.64	731,683.78	
1870	602,173.73	1,222,995.06	620,821.33	
1871	701,029.96	1,429,594.11	728,564.15	
1872	1,016,037.49	1,524,605.24	508,567.75	
1873	883,321.46	1,590,100.12	706,778.66	
1874	768,416.64	1,320,519.23	552,102.59	
1875	541,035.76	1,067,660.58	526,624.82	
1876	523,306.02	882,551.78	359,245.76	
1877	477,606.78	896,569.65	418,962.87	
1878	389,720.25	702,083.45	312,363.20	
1879	326,924.85	695,959.10	369,034.25	
1880	331,343.53	419,430.57	88,087.04	
1881	232,314.17	541,076.73	308,762.56	
1882	294,780.13	553,417.70	258,637.57	
1883	291,574.56	548,055.21	256,480.65	
1884	381,403.87	547,710.66	161,306.79	
1885	342,373.94	529,079.06	186,705.12	
1886	390,705.41	535,525.99	142,820.58	
1887	414,158.81	494,218.72	80,059.91	
1888	430,680.31	525,748.92	95,068.61	
1889				

1883—To pay on account of dividends on canal, \$584,740.00

“ “ transient dues and taxes, 74,530.24

Main line, 44; feeder, 22; total, 66 miles.

¹During the civil war, 1861-1865.

¹In the report for 1861, the Directors say:—"The State Directors having observed a movement in the Congress of the United States in reference to the construction of a Military and Postal Railroad between the city of New York and Washington, deem it their duty to call the attention of the Governor to the subject, that he might adopt such measures as in his judgment would best protect the interests of the state; and they now express the sentiment that it would not be expected that the state of New Jersey would quietly submit to such an encroachment upon her sovereignty and the destruction of an important pecuniary interest, unless the safety and best interests of the country required it. They are fully persuaded that no such necessity does exist."

²For 245,825 tons of "superior" freight the charge was eight cents per ton. For 1,394,172 tons of "inferior" freight the charge was two cents per ton.

³"For maintaining and operating the canal, including repairs and transit duty paid to the state."

⁴The report for 1862 renews the protest against the Military and Postal road between Washington and New York by Congress.

⁵ "A still more emphatic protest.

Incomplete Tabular Statement of traffic through the Delaware and Raritan Canal.

	1852.	1859.	1860.	1861.
Coal, tons.....	998,302	1,155,261	1,283,264	1,022,902
Timber, c. ft.....	2 734,031	1,606,558	2,314,749	1,472,475
Lumber, b. m. . .	6,655,916	11,886,488	11,878,913	6,502,020
Grain, bushels..	840,559	657,736	742,001	825,578
Flour, barrels...	119,166	164,219	211,203	101,202
Iron, tons.....	31,391	31,825	40,032	28,766
Mdse., tons.....	135,290	209,481	227,394	239,642
	1862.	1863.	1864.	1865.
Coal, tons.....	1,007,718	1,262,032	1,329,082	1,552,108
Timber, c. ft.....	2,282,789	3,174,035	3,050,470	2,878,206
Lumber, b. m. . .	14,232,470	13,839,792	14,358,992	14,143,297
Grain, bushels..	902,426	2,644,745	2,072,821	2,476,683
Flour, barrels...	195,022	248,352	266,647	208,838
Iron, tons.....	39,614	48,661	48,648	41,143
Mdse., tons.....	322,727	357,169	287,358	295,388
	1866.	1867.	1868.	1869.
Coal, tons.....	2,282,203		1,923,532	1,888,003
Timber, c. ft....	2,864,915		2,468,568	3,328,731
Lumber, b. m. . .	16,362,237		18,893,913	15,811,117
Grain, bushels..	3,379,688		1,974,227	1,434,250
Flour, barrels...	185,694		21,369	281,646
Iron, tons.....	55,291		63,142	54,893
Mdse., tons.....	354,341		402,931	468,605

The gross tonnage for a few other years not itemized, is reported to be, for 1874, 2,308,670; for 1875, 1,958,004; for 1876, 1,897,708; while for 1868 it was 2,519,285; and for 1869, 2,547,212; or over half a million tons more than after the lease.

In 1874, the coal shipments were but 1,548,303 tons.

The main line was 44 miles in length, with a feeder extending from Trenton to Bull's Island, 22 miles, giving a total of 66 miles. It was 80 feet wide at the surface and seven (7) feet deep.

The Report of 1882 says :

"In consequence of the large increase of transportation upon the canal, the company have decided to enlarge its dimensions so as to leave in all places eight feet clear depth of water, and to lengthen the locks from one hundred and ten to two hundred and twenty feet, so as to take in two of the present boats, or one of two hundred and twenty feet in length and capacity of five hundred tons.

The estimated cost of these improvements, and to carry out the plan of enlargement, is \$700,000."

In the Report for 1866 are to be found these items:

The cost of the Camden and Amboy Railroad and equipments is.....	\$10,099,000.97
The cost of the Delaware and Raritan Canal and appurtenances is.....	<u>\$4,381,251.28</u>

The receipts of the Camden and Amboy Railroad and Transportation Company for the twelve months ending December 31, 1866	\$4,312,895.00
Expenses	<u>3,801,732.45</u>
Current net.....	<u>\$511,162.55</u>

The receipts of the Delaware and Raritan Canal Company for twelve months ending December 31, 1866	\$1,294,156.69
Expenses	<u>360,513.83</u>
Current net.....	<u>\$933,642.86</u>

This statement shows very conclusively that upon a capital of over four million dollars invested in the

canal, the net returns were nearly 23 per cent.; while upon the capital of over ten millions invested in the railway, the net return was only a little more than 5 per cent. For an equivalent return, the railroad capital should have produced a profit of \$2,152,100. In other words, although the rates by canal were less than those by rail, the cost of maintenance and operation were so much smaller, that its returns were nearly five-fold greater than those of the railroad. It was further stated that "while the business of the railroad, both in passengers and freight was not equal to that of the previous year, that of the canal was increased to almost its entire (present) capacity. A new outlet lock is being constructed at New Brunswick, which will greatly facilitate the dispatch of their tonnage."

Interesting as this history may be, it is not an isolated case. It is a common experience to note in our technical press such items as this. "The Old Pennsylvania Canal, that has been in service for sixty years, is now practically abandoned, and its bed is to be used by the Pennsylvania Railroad. This road owns the canal, and is at work destroying the old aqueducts, bridges, etc., and is straightening out its line in many places by using the canal bed. Portions of the canal were in use up to the present year."¹

The history of another of the great arteries of Pennsylvania, the Schuylkill Navigation Company's Canal, is nearly the same. Efforts are now making to divert it from its original purpose of a navigable channel, to an open aqueduct for the supply of potable water to the city of Philadelphia, but there is a somewhat pathetic story connected with its early life

¹*Engineering News*, Jan. 4, 1890.

which will serve to illustrate the great service this canal has rendered in making Philadelphia what she is to-day.

Although coal was quarried at Summit Hill in 1792, it had no market value, as there were no means of transporting it and it was not known how to make it burn readily.

The Schuylkill Canal was opened from Philadelphia to Mount Carbon in 1825, but shortly before that date a prominent citizen had a load of coal conveyed by wagon from the quarry at a cost of thirteen dollars and a half. He had subscribed largely to the stock of the proposed navigation company, and his friends thought him visionary. Upon the arrival of the coal he had a grate constructed in his parlor, upon which a "stone coal" fire was soon kindled. His house was besieged by the interested and curious citizens of Philadelphia, who wished to see this marvelous phenomenon. Amongst the visitors was an acquaintance who had protested vigorously against his friend's extravagant investment in the canal securities, but who, on seeing the coal fire burning so successfully, and throwing out such great heat, gave vent to his pent up feelings in tears. When asked why he displayed so much emotion, he replied, that for years he had been deeply concerned about the welfare of his children and grand-children, in wondering how they could obtain sufficient hard wood for fuel during the winters, when it was then selling at \$18 a cord for hickory, and \$13 for oak. His fears were allayed by the phenomenon before him, and his gratitude to a beneficent Creator thus expressed itself.¹

¹This anecdote was related to the writer recently by Hon. Fred'k Fraley, who was an eye witness of the events described.

Instead of wood at the above prices, or coal hauled by wagon at \$13 for the partial load, the canal subsequently delivered unlimited quantities of this fuel at the rate of 90 cents per ton for tolls and freight. The value of this stimulus to the manufacturing industries of Philadelphia and the adjacent territory, can hardly be over-estimated, and had it not been for the impetus given to the commerce of New York by the opening of the Erie Canal in 1825, Philadelphia might have retained her envied position as the first city in population in the United States.

This early canal through New York State had a prism of only four feet draught, carrying boats of seventy-six tons capacity, and was operated at a cost of 4.14 mills per ton per mile, while on the enlarged canal having a depth of seven feet and boats of 210 tons capacity, the reduced cost was 2.16 mills.¹ Again, upon the projected re-enlarged 8 feet canal, with boats of 600 tons, the cost was estimated by the State Engineer in 1863 at only 1.04 mills per ton per mile. Before this canal was built the cost of transportation from Buffalo to New York was \$100 per ton, and the length of time required for the trip was *twenty* days.

On the 14th of March, 1835, Messrs. J. B. Jervis, H. Hutchinson and F. W. Mills reported to the canal Commissioners that: "Taking the facts we have obtained as a basis, we find the relative cost of conveyance (by rail and canal) is as 4.375 to 1,000, a little over four and one-third in favor of canals, this is exclusive of tolls or profits. * * * We are led to the conclusion that in regard to the cost of construction and maintenance, and also in reference to the expense of conveyance at moderate velocities, canals

¹The general rule already stated would give 2.36 mills.

are clearly the most advantageous means of communication, &c."

The velocity of movement does affect greatly the utility of the canal. The resistance increasing with the square of the velocity, for high speeds much greater power is required in these contracted channels, so that the practical limit for steamers on ship canals like the Suez, is found to be from five to six miles per hour. Velocity on a canal is equivalent to grade on a railroad, since it creates a hill or grade against the boat.

From the character of this evidence it will appear that even the early canals of small draught were cheaper modes of transportation than the railroads which were then charging about $2\frac{1}{2}$ to 3 cents per ton per mile, and when Genl. H. Haupt, chief engineer of the Pennsylvania railroad, about 1854, proposed to reduce the rate to about one-half of this and increase the volume of the tonnage proportionately, it met with violent opposition from the board of directors, and was believed to be a ruinous policy. Now, however, the road is carrying a large portion of its enormous tonnage for less than one-half a cent, and making money.

But the time has evidently arrived when it will pay to enlarge some of the existing trunk line water ways to the dimensions of ship channels, especially where they form links in a water communication between populous communities. The enlargement of the Delaware and Raritan and the Delaware and Chesapeake are works which should no longer be delayed.

HISTORY
OF THE
NEW YORK PROPERTY TAX.

1

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AMERICAN ECONOMIC ASSOCIATION.

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**SIX NUMBERS A YEAR.
PRICE \$4.00 A YEAR.**

History
OF THE
New York Property Tax.

**AN INTRODUCTION TO THE
HISTORY OF STATE AND LOCAL FINANCE
IN NEW YORK.**

—BY—

JOHN CHRISTOPHER SCHWAB, A. M., Ph. D.

AMERICAN ECONOMIC ASSOCIATION.

September 1890.

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PREFACE.

The following pages are an enlargement of my contribution to Professor Ludwig Elster's "Staatswissenschaftliche Studien," entitled "Die Entwicklung der Vermögenssteuer im Staate New York," Jena, Gustav Fischer, 1890.

I have at times gone more into details than may seem necessary; however, I did so in the hope that various lines of investigation might be suggested to the student of the economic history of our country, a most favorable field for investigation, which has so far received but little attention from American economists.

It will be impossible to name all the persons who have assisted me in the preparation of this article, but I cannot refrain from expressing my obligations to Professor Gustav Cohn, of the University of Göttingen, for the kindly interest he took in my economic studies while in Germany.

My particular thanks are also due to Professor Richard T. Ely, of Johns Hopkins University, to the officials of the Royal Library and Royal Archives in the Hague, of the New York State Library in Albany, of the New York Historical Society, of the New York City Comptroller's Office, and to Captain Francis J. Twomey, Clerk of the Common Council of New York City, for the valuable assistance I received at their hands.

NEW HAVEN, CONN.,
September, 1890.

LIST OF AUTHORITIES.

MANUSCRIPTS, ETC.

New York Colonial MSS., and the Duke of York's Charter of Liberties and Privileges to the Inhabitants of New York, anno 1683, with Acts of the Assembly of that year and the year 1684 (Dongan's Laws, 1683-4), in the State Library, Albany.

Locketkas van de Generale-Staten, and West-Indische Saecken in the Rijksarchief in the Hague, Holland.

Original Dutch Documents, and Minutes of the Common Council, 1675—in the office of the Clerk of the Common Council and in the City Library, New York City Hall.

New York City Journals, Ledgers, Assessment Rolls and Tax Books in the City Comptroller's Office.

Miscellaneous Documents in the Record Room, Finance Department, New York City.

Van der Donck, Adriaen, *Beschryvinge van Nieuw-Nederland*, Twede Druck, Almseldam, 1656. *Beschryvinge van Discours over de gelegentheiden van Nieuw Nederlandt, tusschen een Nederlants Patriot ende een Nieuw Nederlander*, 1656. *Conditien die door de Heeren Burgemeesteren der Stadt Amsterdam gepresenteert werden aen alle de gene die als coloniers na Nieuw Nederlandt willen vertrecken, t'Amsterdam*, 1656. *Kort Verhael van Nieuw Nederlants Gelegentheit*, 1662, in the Koninklijke Bibliotheek in the Hague.

Sommer *Verhael van sekere Amerikaensche Voyagie gedaen door den Ridder Balthasar Gerbier 1660, and Vertoogh van Nieu-Neder-Land, weghens de Gelegentheit, Vruuchtbaarheid en soberen Staet disselsa, s' Gravenhage*, 1650, in the Rijksarchief in the Hague. The latter pamphlet has been translated by Dr. E. B. O'Callaghan. *Remonstrance of New Netherland and the Occurrences There*. 28th July, 1649. Albany, 1856.

Brodhead, J. R. *Documents Relating to the Colonial History of the State of New York*. Albany, 1853-1856.

HISTORICAL WORKS.

Adams, Henry Carter. *Taxation in the United States*, 1789-1816. Johns Hopkins University Studies in Historical and Political Science. Baltimore, May and June, 1884.

Andrews, I. W. *Macmaster on Our Early Money*. Magazine of Western History. Vol. IV, p. 141. (June, 1886.) Cleveland, Ohio.

Bancroft, George. *The History of the United States of America*. New York: Appleton, 1885.

Blackmar, Frank W. *The History of Federal and State Aid to Higher Education*. Washington, 1890. Bureau of Education, Circular of Information, No. 1. 1890. *Contributions to American Educational History*. Edited by Herbert B. Adams.

Brodhead, J. R. *History of the State of New York*. New York, 1872.

O'Callaghan, E. B. *Documentary History of New York*. Albany, 1849-1851.

The same. *History of New Netherland*. New York, 1848.

Cheyney, Edward P. *The Anti-Rent Agitation in the State of New York, 1836-1846*. Publications of the University of Pennsylvania. Philadelphia, 1887.

Collection of the New York Historical Society for 1860. New York.

Elting, Irving. *Dutch Village Communities on the Hudson River*. Johns Hopkins University Studies in Historical and Political Science. Baltimore, 1886.

Engels, P. H. *De Belastingen en de Geldmiddelen van den Aanvang der Republiek tot op Heden*. Utrecht, 1862.

The Federalist. Henry B. Dawson. New York: Scribner, 1864.

Hildreth, Richard. *The History of the United States of America*. New York: Harper, 1882.

Howard, George E. *An Introduction to the Local Constitutional History of the United States*. Baltimore, 1869.

Jameson, J. Franklin. Willem Usselinx. *Papers of the American Historical Association*. Vol. II, No. 3. New York, 1887.

Johnston, Alexander. *American Commonwealth Series*. Connecticut. Boston and New York, 1887.

Laspeyres, Etienne. *Geschichte der volkswirtschaftlichen Anschauungen der Niederländer zur Zeit der Republik*. Jablonowskische Preisschrift, 1863.

Moulton, Joseph W. and Gates, John V. N. *History of the State of New York*, 1824.

Municipal Register of the City Council for the year 1859. Boston, 1859.

Pierson, John W. *The Dutch Grants, Harlem Patents and Tidal Creeks*. New York, 1889.

Roberts, Ellis H. *American Commonwealth Series*, New York. Boston and New York, 1887.

Valentine, David T. *Compilation of Existing Ferry Leases and Railroad Grants made by the Corporation of the City of New York*. New York, 1866.

The same. History of the City of New York. New York, 1853.

The same. Manual of the Corporation of the City of New York, for the year 1842 and following.

TAX LAWS.

O'Callaghan, E. B. Laws and Ordinances of New Netherland. Albany, 1868.

The Laws and Acts of the General Assembly for Their Majestie's Province of New York (beginning April 9, 1694). Copies in the Lenox Library, and in the New York Society Library, New York.

The Laws of Her Majesty's Colony of New York. New York: William Bradford, 1710.

The Laws of New York. New York, 1713. (Pennsylvania Historical Society, Philadelphia.)

The Laws of His Majesty's Colony of New York. New York: William Bradford, 1719.

The same. London: John Baskett, 1719.

Acts of the Assembly of New York, 1691-1725. New York: William Bradford, 1726.

Laws of New York, 1691-1751. Edited by William Livingston and William Smith, Jr. New York, 1752.

The same for 1752-62. New York, 1762.

Laws of New York, 1691-1773. Edited by Peter Von Schaack. New York, 1774.

Journals of the Votes and Proceedings of the General Assembly of the Colony of New York, 1766-76. Albany, 1820.

Acts of the New York Assembly, 1774-5. New York, 1774-5.

Laws of the State of New York, 1777-1784. Albany, 1886.

The same, 1785-88. Albany, 1886.

The same, 1789-96. Albany, 1887.

The same, 1797-1800. Albany, 1887.

Laws of New York, 1774-1889.

The Revised Statutes of the State of New York, 1829, 1835, 1846, 1852, 1859, 1875, 1882, 1889.

Journal of the Legislative Council of the Colony of New York. Albany, 1861.

Street, Alfred B. The Council of Revision of the State of New York. Albany, 1859.

Laws of the State of New York relating particularly to the City of New York. New York, 1833.

Laws of the State of New York relating to the Assessments in the City of New York. New York, 1848.

Laws of New York State relative to New York City. Edited by A. R. Lawrence, Jr. New York, 1859.

Proceedings of the Board of Supervisors of the County of New York, September 6th, 1809 to May 9th, 1839. New York, 1865.

An Act to Consolidate into one Act and to Declare the Special and Local Laws affecting Public Interests in the City of New York. (Laws of New York, 1883, ch. 276.) New York, 1883.

A Digest of Fees of Town and County Officers of the State of New York. 5th ed. Rochester, 1884.

Graham, C. H. and Lane, O. F. The Excise Laws of the State of New York. Albany, 1883.

Burroughs, W. H. Law of Taxation. New York, 1877.

Cooley, Thomas M. A Treatise on the Law of Taxation. 2nd ed. Chicago, 1886.

Dillon, John F. Commentaries on the Law of Municipal Corporations. 2 vols., 3rd ed. Boston, 1881.

Davies, Julien T. A Compilation of Constitutional Provisions, Statistics and Cases relating to the Assessment of Taxes in the State of New York. New York, 1886.

The same. System of Taxation in the State of New York. Troy, 1888.

Jenkins, John. The Town Clerk's Assistant. Auburn, 1850.

Thompson, Isaac Grant. Collectors' and Town Clerks' Manual. 7th ed. Albany, 1882.

Stimson, F. J. American Statute Law. Boston, 1886.

The same. First Supplement, Ibid, Boston, 1888.

(These works are to be found in the Law Institute Library and in the New York Historical Society, New York City, and in the State Library at Albany.)

FINANCIAL REPORTS, ETC.

Wolcott, Oliver. Report on Direct Taxes. American State Papers. Vol. 7 (Finance, vol. 1), No. 100, p. 414.

Report, New York State Comptroller for 1831-1890. (New York Historical Society; New York State Library; New York City Library; Record Room, Finance Department, New York City.)

Report, New York State Assessors for 1874, 1875, 1879, 1888.

Report, Annual, State Treasurer of New York for 1846.

Report, New York City Comptroller for 1831-1888.

Statement of the Bonded Debt of the City and County of New York, December 31, 1886, arranged and prepared by the Commissioner of Accounts. New York, 1887.

Report, Tax Commissioners on the Assessment and Collection of Taxes to Board of Supervisors, New York, 1850.

Report, First, on Income and Property Tax in New York. New York, 1852.

Report, Commission on Local Taxation (in New York). New York, 1871.

Report, Special Commission in New York, 1872-3.

Report, Tax Commission in New York (Decisions, Opinions and Statistics). Albany, 1881.

Message of Abram S. Hewitt to the New York Board of Aldermen, January 10, 1888. Document, No. 1. New York, 1888.

(Similar reports in other States are referred to in the text.)

AMERICAN PUBLICATIONS ON THE PROPERTY TAX.

Adams, Henry Carter. Public Debts. An Essay in the Science of Finance. New York, 1887.

Andrews, George H., in the North American Review, 122: 402 (1876).

The same. Address before the (New York) Assembly Committee of Ways and Means. New York, 1874.

The same. Unequal State Taxation. New York, 1875. Taxes and Assessments in New York City, 1876. Twelve Letters on the Future of New York City, 1877.

Bernheim, A. C. The Ballot in New York. Political Science Quarterly. Vol. IV, No. 1. New York: March, 1889.

Ely, Richard T. Taxation in American States and Cities. New York, 1888.

The same. Supplementary Report (of Maryland Tax Commission). Baltimore, 1888.

Ensley, Enoch. The Tax Question. Nashville, Tenn., 1873.

Ford, W., The American Citizen's Manual (Questions of the Day, V-VI). New York: Putnam, 1887.

Foster, Roger. The Taxation of the Elevated Railroads in the City of New York. New York, 1883.

Lane, Jonathan A. Report of Special Committee on Taxation. Annual Meeting Boston Executive Business Association, October 21, 1889. Boston, 1889.

Minot, William, Jr. Taxation in Massachusetts. Boston, 1877.

Seligman, E. R. A. The General Property Tax. Political Science Quarterly. Vol. V, No. 1. New York: March, 1890.

Spahr, C. B. The Taxation of Labor. Political Science Quarterly. Vol. I, p. 400.

Walker, Francis A. The Bases of Taxation. Political Science Quarterly. Vol. III, No. 1.

The same. The Principles of Taxation in his Political Economy. American Science Series. No. 5, p. 439-475. New York, 1883.

Wells, David A. Reform of Local Taxation. *North American Review*, 122: 357 (1876).

The same. Are Titles and Debts Property. *Atlantic Monthly*, September, 1877.

GERMAN PUBLICATIONS.

Cohn, Gustav. Die Einkommensteuer im Kanton Zürich. *Jahrbücher für die National-ökonomie und Statistik*. (B. Hildebrand und J. Conrad.) Band 34, S. 158; Band 35 (Neue Folge Band 1), S. 205. Jena, 1880.

The same. Die Steuerreform im Kanton Zürich und der Bundeshaushalt der Schweiz. *Finanz-Archiv* (G. Schanz). Jahrgang 1, S. 45. Stuttgart, 1884.

The same. Income and Property Taxes. *Political Science Quarterly*. Vol. IV, No. 1. New York: March, 1889.

Die Kommunalsteuerfrage. Zehn Gutachten und Berichte, Verein für Sozialpolitik. Leipzig, 1877.

Die Reform der direkten Steuern in Bayern. *Jahrbücher für National-ökonomie und Statistik*. Band 34. Jena, 1880.

Die Revision der Gesetzgebung über die direkten Steuern in Sachsen. *Ibidem*. Band 16, S. 428 (1871); Band 21, S. 227 (1873).

Die Vermögenssteuer und die Steuerverfassung in Althessen. *Ibidem*. Band 25, S. 297 (1875).

Held, A. Die Überwälzung der Steuern. *Zeitschrift für die gesamte Staatswissenschaft*. Band 24, S. 421. Tübingen, 1868.

Kries, C. G. Über die Vermögenssteuer im Staate New York. *Ibidem*. Band 11, S. 127 (1855).

Neumann, F. J. Die progressive Einkommensteuer. Verein für Sozialpolitik. Leipzig, 1874.

Patten, S. N. Das Finanzwesen der Staaten und Städte der nordamerikanischen Union. *Conrad's Sammlungen national-ökonomischer Abhandlungen*. Band 2.

ENGLISH TAXATION.

Bödiker, T. Die Kommunal-Besteuerung in England und Wales. Berlin, 1873.

Dowell, Stephen. *History of Taxation and Taxes in England*. 2nd ed. London, 1888.

Gneist, Rudolf. Die heutige englische Kommunalverfassung und Kommunalverwaltung oder das System des Selfgovernment in seiner heutigen Gestalt. Berlin, 1860.

The same. Geschichte und heutige Gestalt der englischen Kommunalverfassung oder des Selfgovernment. Berlin, 1863.

Palgrave, R. H. Inglis. On the Local Taxation of Great Britain and Ireland. *Journal of the Statistical Society.* London: June, 1871. Vol. 34, p. 111.

Probyn, W. Local Government and Taxation in the United Kingdom. London, 1882.

Rogers, J. E. Thorold. The Economic Interpretation of History. London, 1888.

Scott, John. On the Local Taxation of Great Britain and Ireland. *Journal of the Statistical Society.* London: September, 1871. Vol. 34, p. 281.

Sinclair, Sir John. History of the Public Revenue of the British Empire. London, 1803.

Vocke, W. Geschichte der Steuern im britischen Reiche. Leipzig, 1866.

Wagner, Adolf. Finanzwissenschaft. 3ter Theil. Leipzig, 1889.

MISCELLANEOUS.

Bryce, James. The American Commonwealth. Vol. 2. The State Governments. London and New York, 1888.

Dougherty, J. Hampden. The Constitutions of the State of New York. *Political Science Quarterly.* Vol. 3, No. 3. New York: September, 1888. Vol. 4, No. 2. June, 1889.

Jackson, William. The Constitutions of the Several Independent States of America. London, 1783.

Stokes, Anthony. A view of the Constitutions of the British Colonies in North America and the West Indies. London, 1783.

Van Holst, H. Das Staatsrecht der Vereinigten Staaten von America. Handbuch des Öffentlichen Rechts. H. Marquardsen. Freiburg ¹/_a und Tübingen, 1884. Band IV, I, 3.

GENERAL WORKS ON PUBLIC FINANCE.

Cohn, Gustav. System der Finanzwissenschaft. Stuttgart, 1889.

Cossa, Luigi. Taxation, Its Principles and Methods (translated from the Italian). New York. Putnam, 1889.

Leroy-Beaulieu, Paul. *Traité de la Science des Finances.* 4ème ed. Paris, 1888.

Mill, John Stewart. Principles of Political Economy.

Roscher, Wilhelm. Finanzwissenschaft. 2te Auflage. Stuttgart, 1886. (System der Volkswirtschaft. Band 4.)

Schönberg, Gustav. Handbuch der politischen Ökonomie. 2te Auflage. Tübingen, 1885. Band 3. Finanzwissenschaft und Verwaltungslehre.

Smith, Adam. *Wealth of Nations*. Book 5. *Of the Revenue of the Sovereign or Commonwealth*.

Schäffle, Albert E., Pr. *Die Grundsätze der Steuerpolitik*. Tübingen, 1880.

Von Stein, Lorenz. *Lehrbuch der Finanzwissenschaft*. 3te Auflage. Leipzig, 1875.

Wagner, Adolf. *Finanzwissenschaft*. 6te bez. 7te Ausgabe von Raus *Finanzwissenschaft*. Leipzig und Heidelberg, 1880, 1883, 1889.

HISTORY OF THE NEW YORK PROPERTY TAX.

I.

1623-1664.

It is in vain that we look for a pronounced fiscal policy in New Netherland. A glance at the economic condition of the Hudson valley during the half century ending with the English invasion in 1664, is the best explanation of this absence of a well regulated tax system. The country open to settlement by the Dutch could offer little to an emigrant, however attractively the pamphlets of the day described its fruitful soil, on which sugar, indigo, cotton, cinnamon and other southern products could be raised in abundance, ("overvloedigh"), its beautiful rivers and navigable waters, its trade and fisheries.¹ Like their successors in our Western Territories, the colonial enthusiasts of those days drew on their imagination as well as their pocket book, in order to induce settlers to emigrate to the New World. The Dutch West India Company, or the city Amsterdam,² or some wealthy Dutchman, as the case might be, paid the passage money of the emigrants, provided them with homes in some suitable district along the Hudson, fortified the settlements and offered

¹Cf. *Beschrijvinge von Nieuw Nederland*, etc. *Vertoogh van Nieu-Neder-Land*, etc., *Sommer Verhael van Amerikansche Voyagie*, etc.

²*Conditien der Stadt Amsterdam*, etc.

the settlers farming utensils, seed and clothing for one year at Dutch prices, and beside all this liberality offered them immunity from every form of taxation, direct and indirect, during a term of ten years.¹

Similar exemptions were offered by the city of Amsterdam in 1656 to any would-be settlers on the Delaware River.²

The character of the Dutch settlements was largely influenced by the institution of patroonship.³ Many rich Dutch merchants availed themselves of the chance of establishing themselves as patroons or feudal lords in this new country, and founded an American land aristocracy which became a leading factor in the history of New York.⁴ The right of preëemption, the monopoly of mills, quarter sales, license to fish and hunt, the power of the patroon to administer civil and criminal justice, the appointment by him of local officers and magistrates, indeed a modified system of feudal land tenure was established, only gradually to disappear. The exaction of quit rents (or ground rents) dating from this time led to the troubles of 1836-46.⁵

¹*Lockettas, W. I. Co., No. 30; Vregheden By de Vergaderinghe van de negenthiene van de Geoctroyeerde West Indische Compagnie, 1630.* The Company promised "de Coloniers van de Patroonen inden tijdt van thien Jaren niet te beswaren met Convoy, Pol, Accijs, Imposten, ofte eenighe andere contributien: ende nae d'expiratie van de selve thien jaren, ten hooghsten met sulcken Convoy als de goederen hier te Lande tegenvoordigh beswaert sijn."

²*Laws and Ordinances N. Nethd*, p. 243.

³Brodhead, *History N. Y.*, I. p. 144 ff. *W. Ind. Saecken*, folio 44, 488, 550.

⁴*Doc's Col. History N. Y.* I p. 4; Elting, *Dutch Village Communities*.

⁵Cheyney, *Anti-Rent Agitation in the State of N. Y. 1836-46.* Brodhead, *History N. Y.* I. p. 194-200.

This system of quit rents, which was characteristic of the lands leased directly by the government to settlers, as well as of lands in the possession of the patroons, may be considered the beginning of a land tax. Its relation to the later property tax will be touched upon below.

The colonial revenues of New Netherland were almost exclusively derived from two sources, from duties and from excise.

The favorable situation of New Amsterdam was soon recognized by the Dutch.¹ Immediately upon its settlement it became an important trading centre. From the Island of Manhattan, goods imported from Holland were distributed along the Hudson and through the interior. This was especially the case with so-called "Indian goods." Furthermore, the town lay in the direct line of commerce between New England and the settlements in Virginia, the Colonial navigators preferring the quiet waters of Long Island Sound to the open sea route to the south of that Island. New Amsterdam became the centre of export trade, the chief articles of export remaining for a long time tobacco and furs, especially beaver skins. The importance of the latter article of export is suggested by the beavers in the seal of New Amsterdam, which are retained in the municipal coat of arms of New York to this day, and by the fact that in the terms of capitulation, dated March 12th, 1664, the yearly payment of forty beaver skins to the Duke of York was stipulated.²

¹Van der Donck, *Beschrijvinge van Nieuw Nederland*, p. 9.

²Doc'y *History N. Y.* II, p. 396; *Laws and Ordinances of the city of N. Y.*, (Wm. Bradford) 1707, Charter of 1686. Brodhead, *History N. Y.* II, Appendix.

During the seven years, 1624-1630, 42,987 beaver skins and 4,890 other skins, to the value of \$140,000 (355,692 guilders) were exported from New Netherland.¹

The favorable situation of New Amsterdam, the key to the Dutch possessions in North America, naturally led to the introduction of import, export and transit duties, which the West India Company, thanks to its exclusive right of transportation, found comparatively little difficulty in collecting. The duties never seem to have risen above 15 per cent. *ad valorem*.²

Occasionally we hear of complaints, as in 1658, against the heavy export duty on tobacco.³ Reference to defrauding importers is made in 1649,⁴ and in 1661 a schepen of New Amsterdam is convicted of smuggling. The export duty was frequently evaded by transporting goods to Virginia or New England, and exporting them thence to England.⁵ The transit duties on goods going up the Hudson were also at times evaded.⁶

The loss of revenue on this account may have been one of the causes which led to the introduction of an indirect tax on the consumption of beer, wine and liquor.

This second tax which naturally suggested itself to the Dutch authorities was intended to reach the

¹ Valentine's *Manual for 1851*, p. 368.

² Brodhead, *History N. Y. I*, pp. 288, 312, 394; Doc's *Col. History N. Y. I*, p. 429; Dutch Records, City Hall, July 23, 1647.

³ Dutch Records, City Hall, Sept. 19, 1658.

⁴ Dutch Records, City Hall.

⁵ Brodhead, *History N. Y. I*, p. 466 (1647).

⁶ Records Common Council, City Hall, Oct. 16, 1669.

producer, and was comparatively easy to collect, as distilleries, breweries and winepressers existed in great numbers.¹

In 1650 the revenue of the Colony, it is stated by Secretary Van Tienhoven,² was derived from an 8 per cent. export duty on beaver skins, an excise on beer of \$1.20 (3 guilders) per tun, first imposed in 1644, and an excise on wine of 2 cents (1 stiver) per can, first imposed in 1647.

Frequent complaints are made about the heavy taxes, and about Governor Stuyvesant's being "so much given to confiscating."³ His wine excise, "beside still other intolerable burdens," are mentioned. A letter to the Earl of Clarendon in 1661⁴ speaks of "unheard of excise, not only on all goods brought to them or caryed from them, but also on what they eate and drinke."

One gains the impression, in looking through the numerous remonstrances regarding the wretched Home government (*de quade regering*),⁵ that the Colonists were justified in complaining about heavy taxes, and in demanding "exemption from duties, tenths and taxes, which at the first beginning are disadvantageous and oppressive until the country becomes populous and somewhat firmly established."⁶

¹Brodhead, *Hist'y N. Y.*, I, pp. 394, 467. Kort Verhael van *Nieuw Nederlant*, etc., p. 3. Vertoogh van *Nieuw-Nederland*, etc., pp. 5, 60.

²Doc's *Col. Hist. N. Y.*, I, 429. Nov. 29, 1650.

³Vertoogh van *Nieuw-Neder-Land*, etc., pp. 38, 60.

⁴Collections N. Y. Hist. Society for 1869. Clarendon Papers—Maverick to the Earl of Clarendon. Cf. Loketkas, *W. Ind. Co.* No. 30.

⁵Vertoogh van *Nieuw Neder-Land*, p. 38. Loketkas, *W. Ind. Co.* No. 30.

⁶Loketkas, *W. Ind. Co.* No. 30. Petition dated July 26, 1649. Doc's *Col. Hist. N. Y.*, I, 259. Petition dated Oct. 13, 1649.

As early as 1653 the city finances of New Amsterdam were in a shocking condition.¹ There were no means of paying a debt of \$360 (900 guilders); even the Turnkey was asked to wait for his salary a little, "till something should come into the treasury."

In a letter to the Home government of 1656 the city authorities of New Amsterdam call attention to the low condition of the municipal finances.² "An official remonstrance from the Home government" had failed to relieve matters.³ The citizens were evidently unwilling if not unable to pay taxes.

With envious eyes the Dutch settlers looked toward New England. There, they said, was a populous, rich, prosperous and flourishing district carrying on trade with the whole world, while New Netherland, though much more favorably situated, was desolate, ("woest"), impoverished, endangered, yes, ruined by a wretched government.⁴

The adoption of the New England tax system was desired by many. There, according to Secretary Von Tienhoven's report in 1650,⁵ "all the property and means of the people, as well of the highest as the lowest, were appraised by the magistrates and taxed according to each man's ability for the payment of the governor, deputy governor, magistrates,

¹Dutch Records, City Hall, Dec. 8, 1653.

²*Ib.*, Dec. 12, 1659.

³*Ib.*, Sept. 11, 1656.

⁴*Ib.*, June 12, 1654. Proposition gadaen door den Dr. Genl. en Hooge Rad.

⁵Locketas, *W. Ind. Co.* No. 25. "Aen de Hoogh Moogende Heeren de Heeren Staten Generael der Vereenigde Neederlanden. (De Gecommitteerde uijt Nieuw Nederlant. Feb. 7, 1650.)"

⁶Doc's *Col. Hist'y N. Y.*, I, p. 364. Cf. Peters, T. McC., *Town Government in Mass.*, Bay Colony, middle of seventeenth century. N. Y., 1890.

secretaries, marshals, constables, military officers, ministers and schoolmasters, for the erection of churches, schoolhouses and town edifices, for the repairs of bridges, for the erection of ordinaries for travellers of the University in Boston, for the support of the General Assembly and of the Court."

The low financial condition of the Colony during the governorship of Pieter Stuyvesant led to the extension of the tax system in this direction, that is to the addition of direct taxes to the indirect taxes already existing. In 1654 the officials in New Amsterdam are advised by the Home government to find ways and means to raise money. They act accordingly, and decide to raise a tax on real estate ("taxatie van vaste goederen.")¹ Pieter Stuyvesant seems to have been the moving spirit in this new development. Early in 1654 he and his Council adopt a resolution,² which sets forth that they "have not been able to find a better expedient or measure aside from the duties on merchandise, than to impose an honest and fair tax upon real property, as land, houses or lots, and milch cows or draught oxen." Then follow the proposed rates. The Home government gladly approves of the plan, increases the proposed rates and calls the tax a special war tax.³ The imposition of this tax must have been effective, for a year later the Burgermeester and Schepen of New Amsterdam receive a letter, dated May 26, 1655, from the Home government,⁴ which after addressing them as "Honorable, Pious, Dear, Trusty Subjects,"

¹Dutch Records, City Hall, August 2 and 10, 1654; Oct. 1, 1655. Doc's *Col. Hist'y N. Y.*, XIV, p. 283.

²Doc's *Col. Hist'y N. Y.*, XIV, p. 270.

³Brodhead, *Hist'y N. Y.*, I, pp. 589-90.

⁴Dutch Records, City Hall, August 17, 1655.

announces the establishment of a yearly municipal tax of twenty cents (ten stivers) on each morgen of land, (about twenty-seven cents an acre,) thirty-nine cents (twenty stivers) apiece on horned cattle, and five per cent. on the rent of all houses. Three years later it was decided to assess and tax vacant lots in New Amsterdam the fifteenth penny (six-and-a-half per cent.) until built upon. Payment in kind was as usual allowed.¹ In 1661 the authorities of Esopus are empowered to raise one Rix dollar (presumably equal to three guilders or \$1.20) from every morgen (three-quarters of an acre) of land, or about \$1.60 from every acre.²

This increase of taxes aroused great indignation.³ Indeed the wording of the laws plainly shows that the introduction of direct taxes was intended as an extraordinary measure to supplement the revenue from indirect taxes during the financial distress of the '50's and '60's of the seventeenth century,⁴ which made the English invasion of 1664 and consequent change of government a blessing to the Colony.

In announcing the surrender of the Colony to the English, the Colonial authorities give a parting shot at the Home government. They write:⁵ "We, your Honors loyal, sorrowful and desolate subjects, can-

¹Laws and Ordinances of New Netherland, p. 325 (Jan'y 15, 1658), N. Y. Col. MSS., VIII, 645; XVI, 126.

²Laws and Ordinances of New Netherland, p. 413 (Nov. 12, 1661), N. Y. Col. MSS., IX, 883.

³Doc's *Col. Hist'y N. Y.*, II, p. 151 (1653.)

⁴Laws and Ordinances New Netherland, page 197 (Oct. 11, 1655), p. 184 (Sept. 2, 1654). N. Y. Col. MSS., VI, 97; V, 361.

⁵Dutch Records, City Hall, Sept. 16, 1664. Letter addressed to "Groot, Achtbr and voorsienige Heeren, de Heeren Bewint-heberen van de E. Westindische Compagnie ter Camere Amster-

not neglect nor keep from relating the event, which through God's pleasure thus unexpectedly happened to us *in consequence of your Honors neglect and forgetfulness of your promise.*" Two months later they address a respectful letter to the Duke of York,¹ but do not fail to refer to the Colony's having been impoverished for many years by heavy taxes.

The Dutch West India Company had proved a failure, at least in its attempt to found a strong commonwealth in America. Its primary object had been to develop trade between Holland and America. In this it had been much harassed by the Spanish wars, and aside from New Netherland, its colonies in America amounted to very little. The trade between New Netherland and the quasi-Dutch possessions in South America, particularly in Brazil, of which so much had been expected,² never reached any importance, and Pieter Stuyvesant's high-sounding title of "Director General of New Netherland, Curaçao, etc."³ was little more than a name.

The West India Company displayed too mercenary and selfish a spirit, which did not favor the development of a healthy commonwealth. "The provincial agents generally displayed more devotion to the interests of the directors in Holland than to those of the community over which they were placed."⁴ The administrative policy of England

¹Dutch Records, City Hall, Nov. 22, 1664. Letter addressed to "Groot, Achtbr and voorsienige Heeren, de Heeren Bewintheberen van de E. Westindische Compagnie ter Camere Amsterdam."

²*W. Ind. Saecken*, folio 324, 334, 343.

³Dutch Records, City Hall, March 10, 1648.

⁴Brodhead, *History N. Y.* I, p. 746. Cf. Jameson, Willem Usselinx, also Adam Smith's criticism in his *Wealth of Nations*, Book IV. chap. VII.

was better suited to the needs of the Colony, as experience proved.

It was stated above that the ordinary revenue of New Netherland was derived from indirect taxes and that direct taxes were only resorted to as an unusual measure in time of distress. This conclusion seems to be disproved by numerous references to a property tax as existing on Long Island.

As early as 1654 the "Director General and Supreme Council authorize the schepen and magistrate of the town of Midwout, at their request, to levy six guilders (\$2.40) on each lot situate within the district of said town,"¹ and three years later a tax of 300 guilders (\$120) was levied on the town of Breuckelen. The officials write:² "We, to raise said sum in the easiest manner, assessed and taxed each person as is hereunder more fully set forth, all according to our conscience and opinion in easy circumstances and well off." The Court messenger was authorized to notify each taxpayer of his assessment and to collect the tax, payable in two instalments in country produce. At the same time twelve inhabitants of Walebocht were taxed 88 guilders (\$35), and seven inhabitants of Gouwanus 60 guilders (\$24).

Complete assessment lists of many Long Island towns, dated 1675-83 and signed by the proper officials, are in existence,³ which force us to believe that a well developed property tax was in force on Long Island before the English invasion of 1664.

¹Laws and Ordinances New Netherland, p. 184, (Sept. 2, 1654), N. Y. Col. MSS. V, 361.

²Laws and Ordinances New Netherland, p. 304, (Feb. 13, 1657), N. Y. Col. MSS. VIII, 463.

³*Doc's Col. History N. Y.*, II, p. 700; XIV, p. 736; *Doc. History* II.

These towns are East Hampton, Huntington, Southold, Flushing, Newtowne, Brookhaven, Breuckelen, Boswyck, New Utrecht, Amsfortt, Middelwout, Bushwyck, Gravesend, Jamaica, Hampsted, Oyster Baye, Smith's Towne, Southampton and New Orange.

As an individual assessment we cite that of Richard Browne, of Southold, dated Sept. 16, 1675.¹ He was assessed at 4 heads, £72; 50 acres of land, £50; 8 oxen, £48; 10 cows, £50; 6 three-year-olds, £24; 7 two-year-olds, £17.10; 5 yearlings, £7.10; 6 horses, £72; 24 shepe, £8; 10 swine, £10; 1 year old 1 yearling. £11; total £370—\$1,790.80.

The introduction of a property tax on Long Island at a time when this tax was almost unknown to the Dutch settlers on the continent is easily explained when we remember that Long Island had never been more than nominally under Dutch jurisdiction.² The eastern end of the island was almost entirely settled by the English from New England, Southampton from Lynn, Mass. in 1640, Newtown and Gravesend from Massachusetts, Easthampton in 1653. New Haven, Conn., had been a colonizing centre, whence agricultural settlers had been sent across Long Island Sound.³ The influence of the English had always predominated on the island; indeed, they had claimed the island and were practically in possession of it as early as 1656, as is evidenced by Von der Donck's expression:⁴ "Long Island has almost

¹Brodhead, *History N. Y.* II, p. 257; Doc's *History N. Y.* II, p. 448. The currency of New York was at this time about seven-tenths the value of English money.

²Johnston, Connecticut, pp. 137-8; Roberts, New York, I, p. 89; Hildreth, *History U. S.* I, pp. 146, 416-17, 434, 438, 440, 443.

³Brodhead, *History N. Y.* I, p. 670.

⁴Von der Donck, *Beschrijvinge van Nieuw Nederlant*, p. 7, "het (Lange) Eylandt is meest alle by verscheyde middelen van d'Engelsche gheincorporiert." An anonymous pamphlet of 1662 contains

entirely, by one means or another, been incorporated by the English."

While the mutual boundaries of their possessions were in dispute, the English and Dutch encroached very largely on each other's dominions. On the one hand we hear of "encroaching neighbors," of the invasion of the English and of the English villages on Long Island; on the other hand of Dutch claims to the whole of Connecticut and of Dutch intruders in that colony.¹

The Puritan colonists on Long Island naturally retained the form of taxation to which they had been accustomed in New England, and introduced the customary general property tax.

That the Dutch should not have hit upon the same form of taxation finds a partial explanation in the history of taxation in Holland.²

If the Dutch settlers looked to their mother country for models of tax forms to introduce into their American possessions, as they naturally would, they found numerous types of indirect taxes to choose from, but no tax that bore any resemblance to a general property tax. The Dutch developed every form of indirect taxes to raise the revenue necessary to carry on their war of independence. The importation and consumption of wine, beer and liquor was heavily taxed after about 1580. In the same way many articles of luxury as well as necessity were

a similar expression: "dat hebben de Engelzen ook al op weenigh na in't bezit." Kort Verhael van Nieuw Nederland, p. 18. Cf. Vertoogh van Nieuw-Neder-Land, p. 20, ss.

¹Dutch Records, City Hall, 1653-4, Oct. 22, 1663, Feb. 11, 1664. Vertoogh van Nieuw-Neder-Land, pp. 21, 29; Bancroft, *History U. S.* I, p. 494; Brodhead, *History N. Y.*, I, p. 519.

²Cf. Laspeyres, *Volkswirtschaftliche Anschauungen d. Niederlande*; and Rogers, *Economic*

taxed either by an import or an excise duty. Direct taxes played an unimportant role in Holland during this period.

In the establishment of their tax system, the New England settlers followed the entirely different practice of direct taxation in their mother country, and adopted as their chief tax one which in principle had existed in England since the Norman conquest.¹

The danengeld of the eleventh century, the scutage of the twelfth and the subsidies of later centuries were essentially taxes on real property, while the fifteenths, instituted by Henry II in 1165 to cover the expenses of his crusades, bear the character of taxes on personal property. This system of taxing the aggregate property of all citizens, personal as well as real, existed till far into the seventeenth century, the subsidies under the name of "monthly assessments" at the time of Cromwell, the last one being raised by Charles II in 1673. The introduction of the land tax gave the development of English taxation a new direction.

The whole development is thus summed up by Vocke:²

"English taxes under the feudal *régime* were proportionate to the lands held in fee simple, that is, were real property taxes. Personal property taxes came into vogue as soon as the industrial and commercial classes reached importance, while land taxes were introduced with the decline of the feudal system and consequent changes in land tenure and land values. Income taxes could only be introduced after the complete downfall of feudalism, and when the modern ideas about duties toward the state demanded a contribution from all citizens for a common purpose."

¹Dowell, *History Taxation* III, pp. 67-71: I, pp. 38-162, 227, 238; Sinclair, *History Pub. Rev.* I, p. 43, ff. 87; Vocke, *Steuern d. brit. Reichs*, ss. 479 ss.; Wagner *Finanzw.* III, § § 70-75, ss. 162-172; § § 81-82, ss. 182-4.

²p. 505.

It is interesting to observe how closely some of the early English assessment laws resemble those of New York of a few centuries later. As early as 1188, at the time of the celebrated Saladin tythe, the method of collecting this general property tax is minutely prescribed. We see in its provisions the prototype of the New York assessment laws. The distinction between real and personal property, the exemption of armor, of clerical paraphernalia and of precious stones, presumably because of the difficulty of reaching the latter, are the peculiar features of the law. "And if any one shall have given less than he ought to in the opinion of the officials, four or six loyal men of the parish shall be chosen; being put under oath, these shall say how much more the delinquent should have paid, and he shall be obliged to pay this sum."¹ This is an excellent example of the transition stage from a voluntary to an enforced contribution or tax, of which more below.

The assessment laws of the fourteenth century are more explicit.² The election of assessors in every city,

¹Dowell, *History Taxation* I, Appendix I, p. 227; "Uniusquisque decimam reddituum et mobilium suorum in eleemosynam dabit hoc anno, exceptis armis et equis et vestibus militum, exceptis similiter equis et libris et vestibus et vestimentis et omnimoda capella clericorum, et lapidibus pretiosis tam clericorum quam laiorum."

"Et si aliquis juxta conscientiam illorum minus dederit quam debuerit, eligenter de parochia quatuor vel sex viri legitimi, qui jurati dicant quantitatem illam quam ille debuisset dixisse; et tunc oportebit illum superaddere quod minus dedit."

²Dowell, *History Taxation* I, p. 238.

"Les chiefs Taxours sanz delai facent venir devant eux de chescune cite, burgh et autre vile du counte, deinz franchise et dehors, les plus loials hommes et mielz vanez de meismes les lux a tiele noubre dont les chiefs Taxours puissent suffiseament es tire qatre au sis de chescune ville, ou plus si mester feit, a lour discre-

burgh and town is authorized. The oath of office they are to take, and the method of assessing property they are to adopt, are minutely prescribed.

The appointment of assessors has become well established, the exemption of church property and of necessary household goods, or of what corresponded to them in the middle ages, of horses and arms, is provided for. The assessor's oath, the penalty for concealment, and the assessment of property at its "vereie value" reappeared in their American garb.

We shall see how the system of assessing and collecting taxes in New York had a similar origin, and has always remained true to the principle of measuring a man's ability to pay taxes by the amount of his real and personal property. How deeply rooted this principle is in the Anglo-Saxon race, is shown by the fact that the present British local taxes are still based on a similar principle of taxing land and householders, according to the rental value of their real property.

Municipal Finances of New Amsterdam.

A few words regarding the financial history of New Amsterdam before we take up the English period. In accordance with the custom in Holland,¹

cion, par lesqueux la dite taxacion et ce qe a ce appent a faire mielz purra estre faite et accomplie."

"Et quant il averont tieux eslutz, adonques les facent jurer sur Seintes Evangeles, seit a saver ceux de chescune ville par eux, qe ceux issi juretz loialment et pleinement enquerront queux beins chescun de meismes les villes avoit le jour de Seint Andren avant dit, en meson et dehors, ou q'il fuissent, saunz nul desporter, sur greve forfeture. Et tous ceux biens, ou q'il seient devenuz depuys en cea par vente on en autre manere, loialment taxerount solonc lour vereie value. . . ."

¹Larpeyres, *Volksw. Auschauungen d. Niederländer*, p. 232.

indeed in accordance with the custom in vogue in all medieval communities, the revenues were farmed out. Thus the Burgher and Tapper Excise was farmed out to the highest bidder at public auction.¹ The farmer was required to make quarterly payments to the city treasury, offer two bondsmen and keep an office open for the transaction of business. The farming of the excise must have been a remunerative business, at least judging from the account of the spirited auctions.² The excise duties which the farmer was authorized to collect were established. Curiously enough the tax discriminated in favor of French wines. This source of revenue, the city excise, brought in \$1,700 (4220 Carolus guilders) in 1656, and \$1,400 (3510 guilders) in 1659.

Innkeepers' licenses were early introduced, and on the other hand the price at which the innkeepers were to retail their refreshments was fixed.³ They naturally suffered under this double fire and complained in 1657 that they could only afford to pay the license fee, if the authorities did not prescribe the price at which they were to sell at retail.

Another source of revenue was the city slaughterhouse. This was farmed out in 1656, for instance, for \$280 (710 Carolus guilders), the farmer in return receiving five per cent. of the value of all slaughtered cattle.⁴ The same arrangement is made

¹ Cf. *Conditien en Vorwarden volgens de Costume en ordre onses Vaderlants aende meestbietende te verpachten de Borger Excijs van Wijnen en Bieren binnen deser Stede Amsterdam*. Dutch Records, City Hall, Oct. 30, 1656.

² *Ibidem*, Oct. 29, 1659.

³ Dutch Records, City Hall, Jan. 9, 1657.

⁴ *Conditien en vorwarden . . . aen de meestbietende te verpachten den excijs vant geslacht Bestiaeu binnen de Stede Amsterdaems Jurisdictie*, *Ibidem*, Oct. 30, 1656.

in 1659 and the sum offered rises to \$460 (1135 guilders).¹ All persons slaughtering oxen, cows, calves and sheep for private consumption, are to give notice to the slaughter-house farmer, procure a permit from him and pay him his legal fee.²

These forms of indirect taxation bear as much the character of police regulations as of fiscal measures.

Some revenue was also derived from farming out the ferry to Long Island.

The fees of secretaries, notaries, clerks and similar officials, were fixed by law in 1658,³ and Court fines were to be divided one-third to the city, one-third to the officer, one-sixth to the church and one-sixth to the poor.⁴ Among the fines was one for tardiness and absence from a meeting of the Schout, Burgo-meesters and Schepen;⁵ another of \$10.00 (25 guilders) for neglect to sweep a chimney in case it caught fire,⁶ which fine is still in force and collectible, but amounts now to only \$5.00.

Finally, a considerable sum of money annually flowed into the city treasury from the sale of the "groote borgerrecht" and "klijne" or "poorter recht," the "freedoms" of the English period. The origin of these rights of citizenship remind one forcibly of the exclusiveness of a medieval city. It seems the resident merchants of New Amsterdam were much harassed by the competition of itinerant merchants, coming especially from New England

¹Conditien en vorwarden . . . aen de meestbietende te verpachten den excijs vant geslacht Bestiaeu binnen de Stede Amsterdaems Jurisdictie, Dutch Records, City Hall, Sept. 26, 1659.

²*Ibidem*, Feb. 25, 1659.

³Dutch Records, City Hall, Jan. 25, 1658.

⁴*Ibidem*, Feb. 25, 1658.

⁵*Ibidem*, April 16, 1653, Feb. 27, 1663.

⁶*Ibidem*, Jan. 23, 1648.

and settling only for a short time in the town. Complaints are made as early as 1648.¹ To put a stop, to this sort of competition, foreign traders, especially the "Scotch pedlars", were compelled, by virtue of the city's staple right, to set up and maintain an open store in New Amsterdam, and to procure from the authorities the lesser right of citizenship ("Klijne" or "Poorterrecht", cost \$8.00 or twenty guilders) to enable them to trade.² The greater right of citizenship, "Groote burgerrecht", cost \$20.00 or fifty guilders) qualified the holder for any city office and gave him among other privileges freedom from arrest by a subaltern officer.³ Within two months after the publication of this law, 209 persons had bought the lesser right of citizenship and twenty the greater.⁴

Complaints are nevertheless often heard of non-citizens carrying on trade in New Amsterdam,⁵ and in 1661 it is provided that the right of citizenship should be lost after an absence of four months from the city; and beside obtaining the burgher right, a person must have resided six consecutive weeks in the city or have paid the city \$8.00 (twenty guilders) in beavers (or the value thereof), over and above the cost of his right of citizenship.⁶

The finances of New Amsterdam were from the earliest date poorly regulated. There was constant friction between the city and Home government,

¹Dutch Records, City Hall, Sept. 18, 1648.

²Repeated, Minutes Common Council. April 24, 1691.

³Dutch Records, City Hall, March 29, 1657; June 18, 1660.

⁴*Ibidem*, April 9, 1657.

⁵*Ibidem* 1659 *passim*.

⁶*Ibidem*, Jan. 18, Feb. 25, 1661. Minutes Common Council, March 15, 1683.

regarding the former's right to enjoy the excise and ferry revenues.¹ At times the revenue from one of these sources had to be pledged to the payment of some debt. At other times as in 1658,² "there were several who had bought the burgher right and not paid for it," while the farmers of the public revenues were constantly in arrears in their payment to the city treasury.

II.

1664-1683.

THE CHANGE OF GOVERNMENT.

We pass on to the period which begins with the English invasion in 1664. As was suggested above, the change of government proved beneficial to the colony. The domestic affairs remained almost unchanged. By the articles of surrender it was provided³ "that all officials and magistrates shall continue in office." The payment of the city's debt incurred before the English invasion was provided for. "Planters were to enjoy their Ffarms, Houses, Lands, Goods and Chattels . . . upon ye same terms which they do now possess them, only that they change their masters."⁴ The English population in New Netherland and the close relation between Great Britain and the Netherlands during the seventeenth century made such a change of sovereignty an easy matter.

¹Dutch Records, City Hall, Jan., May 18, Sept. 22, Nov. 23, 1654.

²*Ibidem*, March 25, 1658.

³Dutch Records, City Hall, June 14, 1665. Brodhead, *Hist'y N. Y.*, I, p. 762.

⁴Brodhead, *History N. Y.*, I, pp. 744-5. O'Callaghan, *History New Netherland*, II, pp. 537, 593.

The Duke of York's government of the province was in marked contrast with the Dutch *régime*. The governor general, the duke's representative, soon introduced businesslike management into the colonial finances. A collector of imports was appointed. His oath of office read:¹

"That you will faithfully and truly discharge the trust reposed in iou and that you will not directly or indirectly act or contrive any waij to the prejudice of the revenue but shall on all occasions discover any fraud intended and that you will keep exact accompt of all moneys you Recive and be accomptable to the Maijor and Aldermen so often as you shall be thereunto requiared and not to pay any money to any person whatsoever without a warrant from the Major or his deputy and that signed by M. Nevins as entered."

This shows at least the good intentions of the Government to put the Colonial finances in order. Export and import duties were firmly established, the former as usual laid upon the exportation of "furr, Peltry or hides, tobacco, sugar and Brazilian dyewoods."² The weigh-house and slaughter-house charges were fixed.³ On all sides we see confusion giving away to order. This is particularly evident in the publication of the "Duke's Laws,"⁴ a code copied directly from the existing laws in New England.

In these laws definite provision is made for the assessment of taxes.

"All assessments shall be made by the Constable and the Eight Overseers of the Parish Proportionably to the Inhabitants in the Towne or Parish where such Assessment is to be made and Every Inhabitant who shall not contribute to all Charge both Civill and Ecclesiasticall pportionably to the rate soo assessed shall be compelled thereunto by attachment or distresse of goods to be Levied

¹ Dutch Records, City Hall, June 19, 1665.

² *Ibidem*, March 5, 1671-2. Ordinance, July 2, 1667.

³ *Ibidem*, June 27, Oct. 31, 1665.

⁴ State Library, Albany, Brodhead, *History N. Y.*, II, p. 70ff. *N. Y. Hist. Coll.*, 1st series, vol. 1; Heading; "Assessments, Charges Publique, Fees, etc."

by the Constable, Provided noe man shall be Assessed for Estate reall or psonall which Lyeth not within the Same Towne or Parish where he is assessed . . . That the Justice of the Peace only shall be exempt from Paying any Publique Assessmt in the Parish where he Inhabitt During the time of their bearing Office, Paymts to the Church only excepted The Towne of Assessmts shall be certified in writing into the Sessions and the Justices are Empowered to rate in any inhabitant by Abatement who shall make itt Appeare that he is overcharged”

“Charges publique” are to be regulated as follows:

“That the high Sherriffe for the time being shall from yeare to yeare send forth his warrants to the High Constable of every Towne within their Rideing who shall send warrants to the Constables of each Rideing requireing each Constable to call together the overseers of their town who shall within four months make a list of all the male Persons in the same towne from 16 yeares and upwds and a true Istimacon of all Psonall and reall Estates being or reputed to be the Estate of all and every the Persons in the same towne or otherwise under their Custidy or management according to just valluation”

The kinds of property to be taxed are enumerated, the value of cattle is established. Infirm and sick persons are to be exempt from all taxation. Correction of errors in the assessment list is made possible. Payment in kind, imprisonment in case of refusal to pay, and levy by distress are provided for. The same code of laws fixed the Sheriff, Constable, and Court fees.

It was only on Long Island where, as was shown, the English influence predominated, that the “Duke’s Laws” were carried into effect,¹ while the Hudson valley, especially the cities New York, Albany, Esopus and Schenectady did not come within their jurisdiction. This may be taken as further evidence that the property tax was an unusual form of taxation on the continent during the Dutch period. On Long Island

¹Howard, *Local Const. History U. S.*, p. 105.

on the other hand the "Duke's Laws" fell in with the habits of the people and the regulations concerning taxation were consistently carried out.¹ Property was assessed and taxed, appearing in the rolls under the heads of land, houses and cattle.

On the continent this form of taxation was slower of adoption. In the Delaware valley to be sure we have evidence of a regularly assessed property tax in 1676.² But in this district the English influence had always been strong just as on Long Island.

In 1680 the Duke of York ordered Governor Lewen to inform himself—

"With all diligence and exactnesse wt rent or tax every house at N. Yorke, Esopus, Albany, Long Island and all other N. Y. territories doth or ought to pay by ye year . . . ye total of all Quittrents and other rents, proffitts, services and advantages due and payable to me or any other."³

He was evidently dissatisfied with the absence of any regularly established direct taxes in his American possessions. In New York and Albany the houses had been taxed—

"But att uncertaine rates, some more, some less, as they judge requisite and is or ought to be employed to the use of said towns. . . . But those of New York say they have never had any perfect accot. either of the tax of houses wch amounts to 170£ (\$600) per ann., nor of the dockage, wharfage or anchorage wch. is conceived amounts to a great sume annually. . . . They likewise say a considerable sume of money was raised upon their stocks both Inhabitants and Merchant strangers for making the Docke att first, but never any accot. made to them of it, though they conceive there may be considerable surplusage. The severall Taxes sett or raised by the 200th penny at Albany, fines, Amercia-ments, etc. are set forth in abstract from severall Records as much as could be found. But there was a tax of the 300th penny at

¹Doc's *Col. History N. Y.*, XIV, p. 602 (Nov. 3, 1667); p. 626 (Oct. 12, 1669); III, p. 304 (1681).

²Doc's *Col. History N. Y.*, XII, p. 566 (Nov. 23, 1676).

³Doc's *Col. History N. Y.*, III, p. 280, (May 24, 1680.).

Albany and 200th penny at Schenectadie of wch. I could have no acct."¹

During the revival of the Dutch sovereignty in 1674, Governor Colve had found "no means . . . more reasonable than to raise the moneys by form of a tax on the wealthiest and most affluent inhabitants." . . . He ordered "that an assessed tax be levied on the estates and means, without any exception, of all the inhabitants . . . of New Orange, those alone being exempted whose capital shall be estimated not to exceed the sum of 1,000 guilders (\$400) . . . the assessment to be made by six indifferent persons."² The exemption of property under 1,000 guilders seems to have been an after-thought, for such estates were included in the first two assessments and were afterwards omitted. A Board of Assessors had been appointed on February 1st, 1674, representing in equal parts the Government, the community and the magistrates, and assessed 134 estates.³

A month later Governor Colve raised a forced loan of 1 per cent. of the property of the well-to-do.⁴ It is called "a tax advanced in the form of a loan,"⁵ and naturally met with considerable opposition, "some persons forgetting or refusing to pay," though the loan was to be repaid out of the revenue from

¹Doc's *Col. History N. Y.* III, p. 303. Governor Lewen's Report, 1681.

²*Ibidem* II, p. 685; (Feb. 14, 1674).

³Valentine's *Manual* for 1866, p. 805; N. Y. Col. MSS. 23, 206; Moulton & Yates, *History N. Y.* p. 19.

⁴N. Y. Col. MSS. 23, 225; *Laws and Ordinances New Netherland*, p. 522, (March 17, 1674); Doc's *Col. History N. Y.* II, p. 697.

⁵Records Common Council, June 12, 1674. "Taxatie . . . by forme van Leeninge vorstreckt."

import and export duties, a promise which probably was never fulfilled.¹

Voluntary and Enforced Contributions.

The attempt to levy a tax on the property of the well-to-do suggests a subject of great interest to the student of the history of taxation, namely the system of voluntary contributions, which we find were in all early communities the first step toward the establishment of a fixed tax. Such a primitive form of taxation is described in *Tacitus' Germania* (Chap. XV) "A gift is offered by every subject for the support of his chief."

The evolution of a tax from a voluntary contribution is illustrated in the financial history of New York. At first an informal contribution for some common purpose is raised. Gradually the size of the contribution is proportioned by custom to the contributor's possessions. As time goes on, pressure is brought to bear on the contributor and he is forced, by some indirect means, to maintain this proportion. Finally the voluntary character of the contribution has disappeared and it becomes a forced contribution or a tax proportionate to the taxpayer's possessions.

At first for some common purpose, as in 1648, for the erection of a church, or in 1667, for the maintenance of a minister,² voluntary offerings were solicited. Or else, as in 1653, a list of forty-two persons was made out, who were *provisionally* to contribute \$2,000 (5050 guilders), for the purpose of putting the city in a state of defense, the contributions

¹ N. Y. Col. MSS. 23, 235; Doc's Col. History N. Y. II, p. 697.

² Doc's Col. History N. Y. I, p. 424 (Nov. 29, 1650); Dutch Records
Ct.

ranging from Hendrick Kip's \$20.00 (50 guilders) to Cornelis von Steenwyck's \$80.00 (200 guilders).¹ The element of compulsion is already apparent, as well as the indefinite promise of refunding the contribution contained in the word "provisionally." The element of compulsion becomes more apparent in an ordinance of 1655, which reads:—²

"The Director-General and Council of New Netherland . . . consent that the Burgomasters (of New Amsterdam) shall . . . first and foremost solicit both from the trading shippers, merchants, factors and passengers, and from the citizens in general, a voluntary subscription and contribution, each according to his condition, state and circumstances, and in case of opposition or refusal either from any disaffected or ill-disposed persons, which the Director-General and Council do not anticipate, . . . the Burgomasters, with the President of the Schepens are authorized . . . to assess such according to their circumstances, and condition them to constrain to a reasonable contribution and promptly to enforce it by execution."

But the voluntary character of the contribution has not quite disappeared, for Pieter Stuyvesant heads the list and "*offers* as his share \$20.00 (50 guilders) more than any one else, namely \$60.00 (150 guilders)." Cornelis von Tienhoven "*offers* \$40.00 (100 guilders)." Johannes De Peyster "*is assessed*" (getaxeert) at \$20.00 (50 guilders). Domine Megalopensis gives \$20.00 (50 guilders) "*of his own free will* (vrijwillg)." Six men ask to be assessed and are taxed amounts varying from \$24.00 to \$40.00 (60 to 100 guilders). Of the twenty-six persons who attend the first meeting of the Court all but four offer voluntary contributions. At the following meetings the more reluctant appear. Many *offer* contributions but are *assessed* at a higher sum ("pre-

¹Dutch Records, City Hall, March 13, 1653.

²*Ibidem*, Oct. 11, 1655; N. Y. Col. MSS. 6, 97; *Laws and Ordinances New Netherland*, p. 197.

senteert doch getaxeert"), others offer or are assessed a beaver, still others work at the city work or send their slaves in lieu of a contribution. Some are assessed for their houses, their contributions being avowedly made proportionate to their property.¹ Many of the so-called contributors evidently did not act in good faith, for in 1657, two years later, the Court Messenger had to be empowered to collect the amount due from the reluctant contributors "according to the *assessment* made by the Honorable Director General, etc., in October, 1655."²

Similar quasi-contributions are recorded on Long Island in 1657 and 1661.³ Some "voluntarily promise to give and contribute," others are assessed. In one case a citizen "continues at two beavers and offers two beavers more, for those that are unable to pay what they have promised."⁴

An excellent example of the transition stage, from a contribution to a tax, is furnished by a case in New Castle in 1677.⁵ The inhabitants were asked to contribute to the expense of repairing a broken dam. But in order that pressure might be brought to bear on them, the Court ordered "that the Burgers in generall be called together and yt those whoe will pay pro Rata towards it, To have their parts, but those who Refuse, to Loose their commondage."

Similar examples of the evolution of a tax from a voluntary contribution are to be found in the history

¹Dutch Records, City Hall, Oct. 11-15, 1655.

²*Ibidem*, March 9, 1657.

³Laws and Ordinances New Netherland, pp. 305, 414-15 (Nov. 12, 1661); Col. MSS. 8: 463 (Feb. 13, 1657).

⁴Dutch Records, City Hall, Feb. 7, 1666-7.

⁵*Doc's Col. History N. Y.* XII, p. 576.

of New England.¹ Contributions led to fixed taxes in support of Harvard College. It was suggested to the Connecticut authorities when the subject of supporting Harvard College was under discussion, that "if it were *commanded* by you, and left to the *freedom* of every family which is able and willing to give throughout the plantations, to give but a fourth part of a bushel of corn, or something equivalent thereto, and for this end, if every minister were desired to stir up the hearts of the people once in in the fittest season of the year, to be freely enlarged therein, and one or two faithful men be appointed in every town to receive and seasonably send in what shall be thus given to them, it is conceded that no man could feel any aggrievance hereby." At this suggestion the Connecticut Assembly passed a law, ordering two men to be appointed in each town, "who shall *demand* what every family *will* give."

In New York "voluntary contributions" for specific purposes are mentioned, in 1664 and 1671 for the support of the minister, and in 1689 and 1692 for the defense against enemies.² Even the above-mentioned forced loan of 1674, is called a "tax and contribution list."³

Long after the contribution had ceased to be in any way voluntary, and had become a tax, the name "contribution" is retained, quite in keeping with the

¹Blackmar, *History Federal and State Aid to Higher Education*, p. 87, 103.

²Dutch Records, City Hall, Feb. 22, 1664; Records Common Council, July 16, 1671; Doc'y *History N. Y.* II, p. 59 (Sept. 23, 1689); Doc's *Col. History N. Y.* III, p. 822, (March 7, 1692.)

³Valentine, *History N. Y.*, p. 315.

custom of calling the Governor's salary a "free and voluntary gift."¹

A singularly parallel development, is to be found in the history of the English poor rate—

"At first they only claimed voluntary gifts, collections in churches, made at first in midsummer, afterwards more prudently postponed to Christmas. Very soon the appeal for voluntary aid was followed by exhortations to the richer folk, to give of their abundance. Soon the caitiff who would not give, was to be delated to the bishop, who was to exhort him . . . Very soon compulsion followed. The rich but covetous man, who remained obdurate, was to be sent to gaol and an assessment levied on his goods. Finally, a general assessment was ordered."²

Review of Period 1623-1683.

The property tax gained a firm foot-hold with the establishment of the Colonial Assembly in 1683. In the Charter of Liberties of that year,³ it was provided

"That noe Aid, Tax, Tallage, Assessment, Custome, Loane, Benevolence, or Imposition whatsoever shall be layed, assessed, imposed or levyed on any of his Majesties Subjects within this Province or their Estates upon any manner of colour or pretence, except by the act and consent of the Governor, Council and Representatives of the people in general assembly, mett and assembled."

The regulation of the provincial finances was thus put into the hands of the Colonial representatives, and a study of Colonial laws from that time down to the Revolution, is the best source of information regarding the development of the property tax.

Before we examine these laws, it will be well to review the results we have so far reached, covering

¹Records Common Council, Nov. 7, Dec. 10, 1683. Dongan's Laws, 1683-84, p. 56.

²Rogers, *Economic Interpr. History*, p. 242, Cf. Gneist, *Englische Kommunalverfassung*, (1863) I S. 275-81; Sinclair, *History Pub. Rev.* I, p. 101.

³State Library, Albany, Doc's *Col. History*, N. Y. III, pp. 357 ff.; Brodhead, *History N. Y.* II, p. 659.

as they do the first sixty years of the colony's history.

We called attention to the disordered finances and prevailing system of indirect taxes under the Dutch, the gradual development of a direct tax on property beginning as a voluntary contribution or as an unusual method of raising a revenue for a special purpose, and becoming a full-fledged tax under the English rule.

The reasons were given for our belief that the introduction of this form of direct taxation is to be ascribed to the English, in whose history this tax-form has always played a prominent part. Of course one must not lay too much stress on this supposed connection between the tax systems of England and of New York. England had outgrown the cruder form of a general property tax, and besides it was not a question of introducing a new fiscal system into a well-ordered community like an annexed province. Still it was the Duke of York and his government who gave the development of the New York tax system an entirely new direction, and whatever theoretical principles the English authorities had in mind in framing tax laws for the Colony they were moulded, perhaps unconsciously, by the centuries' experience of English direct taxation.

Aside from the English influence, the economic conditions of the Dutch possessions, and a comparison of them with those of New England, largely explain the development of their taxes.

The English settlements in New England were primarily agricultural colonies, the Dutch settlements trade colonies. However highly the trade of New England was spoken of, that section of the

country was chiefly devoted to agriculture. The fruitful Connecticut valley and eastern Long Island were early settled by a farming population.

On the other hand, the Dutch in New Netherland were primarily traders, the best evidence of which was the character of the West India Company.¹ Although the first emigrants in 1623 were sent out as agricultural settlers, they soon desert their fields and hasten to make treaties with the Indians and engage in the profitable fur trade.² While the New Englanders were protecting themselves against the Indians, the Dutchmen were extending their trade up the Hudson and into the interior.

This difference in the character of the settlers of both districts, New England and New Netherland, goes a great way to explain the difference in the tax systems they adopted in the early years of their existence. In New England there was no extensive trade which made indirect taxation expedient. The settlers lived in separate communities, each adult owning and working his own farm. Naturally enough the authorities turned to the possessions of the farming population as a proper object of taxation. Every farmer's real and visible property, his house, farm and cattle, were taken as a measure of his ability to contribute to the common expenses, and he was taxed accordingly. Under the then existing circumstances such a general property tax was both just and expedient.

In New Netherland on the other hand a class of farmers came into existence much later than in New

¹Brodhead, *History N. Y.*, I, p. 747; Bancroft, *History U. S.*, I, pp. 496 ff.

²Brodhead, *History N. Y.*, I, pp. 150-2; Doc'y *History N. Y.*, III, pp. 35-36, 44-45.

England. About the middle of the century, after the curtailment in 1638 and 1640 of the privileges of the West India Company and of the Patroons, agricultural village communities sprang up. The Hudson valley filled up with agricultural settlers, Walloons from Belgium, Huguenots from France, Waldensians from Piedmont and Puritans from New England.¹

As long as the Colonists were traders at New Amsterdam and Beverwyck, or were scattered along the river, their possessions consisting almost entirely of moveable goods, a property tax was difficult to introduce. Even in the agricultural districts of Long Island and the Delaware valley, the property tax when introduced was only collected with difficulty.² In the words of the Court at New Castle:³

"The people live distant and their Estates (are) for the most part very Inconsiderable; that we can find no proper way to discover the vallue of their sed estate, and if discovered to bring it in a Valluable shape to Receive. But if your Honor will be pleased to allow of a Levy to be Laid by the Pole, as they of Virginia and Maryland doe and have continued itt for so many years, not finding out a more easier and better way, then ye Levy can be easier made and Received."

The difficulty of collecting a property tax had been obviated by introducing a pole tax on Long Island in imitation of the similar tax in New England.⁴

COMMONDAGE AND QUIT RENTS.

In all early communities we are accustomed to find extensive tracts of land held in common possession. As a source of revenue commondage in New

¹Elting, *Dutch Village Communities*, pp. 18, 22; Doc's *Col. History N. Y.*, XIV, pp. 332-3; Brodhead, *History N. Y.*, I, pp. 407, 734.

²*Col. History N. Y.*, XIV, p. 602.

³*Ibidem*, XII, p. 590 (Feb. 8, 1677).

⁴*Ibidem*, III, p. 304.

Netherland and New York never was of great importance. We find it mentioned on the island of Manhattan in 1669,¹ while many of the village communities along the Hudson held considerable pasture and wood land in common until a late date,² quite like the Teutonic "Markgenossenschaften," the Commons of the town of Hurley being divided by an act of the State Legislature, April 4th, 1806.

The system of quit rents was never developed into a distinct land tax. In the time of the Dutch, public lands had been leased to settlers for the yearly payment of a small quit rent. This system was adopted by the English, who derived some revenue from this source. At first it had some significance. In 1678 public lands were leased at \$0.40 to \$1.50 (30*d* to 100*d*) per 100 acres.³ These low rates were, it seems, never raised. There was great laxity in collecting the rents,¹ and the proposal of Governor Hunter to derive a large revenue from this source went unheeded. He writes in 1710 to the Lords of Trade:²

"There is one thing I would propose to your Lordships. . . . In the infancy of the English government here Lands were granted without any reservation of Quit Rents. . . . Others were granted with a reservation of such Quit Rents as then were or should thereafter be established by the Laws of this country, others, . . . are under a very inconsiderable Quit Rent; Those granted . . . are with Reservation of 40 cents (2*s*. 6*d*.) each 100 acres, but the quantity is so small and there is so little in her Maj'.

¹Records Common Council, August 31, 1669.

²Elting, *Dutch Village Communities; Laws of N. Y.*, 1710. An act for the easier Partition of Lands in Joynt Tenancy or in common (1708).

³Doc'y *History N. Y.*, I, p. 59.

¹N. Y. Col. MSS., 33 (May 20, 1684); Minutes Common Council, April 2, 1756, Feb. 13, 1764; Laws, Oct. 18, 1701; Jan. 8, 1762.

²Doc's *Col. History N. Y.*, IV, p. 179 (Nov. 14, 1710).

gift, that if all were patented, the Quit Rent would amount to a very inconsiderable sum, so that if your Lordships thought fit to advise the passing of an Act of Parliament at home that all lands within this province granted or to be granted should pay to her Majesty a Quit Rent of 60 cents (2s. 6d.) I believe it would goe a great way in raising a Fund sufficient for the government here."

In 1686 and the following years the provincial quit rents amounted to¹—

	Quit Rents		Duties.		Excise.	
1686	£291.— $\frac{1}{4}$	\$1,000.00	£.....	\$.....	£.....	\$.....
1691	21.12.6	75.00	2521.2.11 $\frac{1}{4}$	8,500.00	203.12	670.00
1693	38.11—	130.00	1916.8. $\frac{1}{4}$	650.00	665.16.6	2,250.00
1694	149 — $\frac{1}{4}$	500.00	3055.11.3	10,300.00	862.4.10	500.00
1695	36.17.6	125.00	23.13.17.10 $\frac{1}{4}$	7,850.00	919.18.2 $\frac{1}{2}$	3,100.00
1698	165.4.9	550.00	.....	.....	.....	.....
1699	— 10.19	2.00	.....	.....	.....	.....

Their irregular character and small amount is apparent when compared with the amount raised by duties and excise. In 1692 no revenue from quit rents is mentioned, and throughout the eighteenth century quit-rent revenue is only referred to here and there.² No pains were taken to collect the revenues—the best proof of which are the numerous laws “for the more easy collecting His Majesty’s Quit-

¹Doc’y *Hist’y N. Y.*, I, pp. 477, 702; N. Y. Col. MSS. 33.

²Doc’s *Col. Hist’y N. Y.*, I, p. 519.

rents,'¹ and the attempt on the part of the English authorities during the Revolutionary war to induce the lease-holders to commute their annual quit rent by the payment of a round sum.

Quit rents were continued under the State government.² Municipal quit rents in New York City will be discussed below. The system was allowed to dwindle, and in its present form remains only as a faint reminder of early Colonial conditions.

The quit rents raised by the Patroons have a similar history, and were brought into prominence by the celebrated Anti-Rent-Agitation of 1836-46.³

III.

1683-1777.

The real history of the New York property tax begins with the establishment of the Colonial Assembly in 1683. From that time on, this tax form was developed in a uniform way, the fundamental principle of taxing every person in proportion to his aggregate property always remaining unchanged. Monotonous uniformity has characterized the development of the property tax, but in this uniformity lies its historically interesting feature.

COLONIAL DUTIES AND EXCISE.

The Colonial revenues from duties and excise we may dismiss with a few words.

¹Acts Jan'y 8, 1762, Oct. 18, 1701; Doc's *Col. Hist'y N. Y.*, VII, p. 901. Minutes Common Council, April 2, 1756, Feb. 13, 1764.

²Cf. *Laws N. Y.*, 1806, ch. 171, p. 599; 1816, 1817, 1818, ch. 281, p. 302; 1819, ch. 222, p. 291.

³Cheyney, Anti-Rent-Agitation in N. Y., 1836-46.

The "Continued Bill for defraying the Requisite charges of the Government," and an "Explanation" of that bill of 1683¹, had put the import and export duties on a firm footing. The revenue from this source, though nominally "*settled* upon His Majesty, then His Royal Highness and his heirs, by Act of Assembly,"² at the request of the Duke of York, who wished and expected some certain revenues to be provided him,³ was "*continued*" from year to year. Such laws, "granting to His Majesty the several Duties and Impositions on Goods, Wares and Merchandizes imported into this colony," were those of 1691, 1692, 1740 and 1753.⁴ It is to be remembered that inasmuch as the revenue from duties flowed into the Royal treasury the colonists cared little about the regulation and collection of duties. The revenue from this source was beyond their reach, and only indirectly played a part in the provincial finances.

The collection of excise duties was regulated by "An Act for laying an excise on all Strong Liquors retailed in this colony," of October 13, 1713, and by an additional law of March, 8, 1773.

During the '90's of the seventeenth century the annual revenue from duties and excise averaged \$8,500 and \$2,700 (£2,500 and £800), respectively,⁵ while in the '20's of the eighteenth century the revenue from duties averaged \$11,000 (£3,360) annually, and in the '50's and '60's \$20,000 (£5,800).⁶

¹Dongan's Laws, State Library, Albany.

²Docy, *Hist. N. Y.*, I, p. 103.

³Doc's *Col. Hist'y N. Y.*, III, pp. 317-18; Brodhead, *Hist'y N. Y.*, II, p. 358.

⁴*Laws N. Y.*, 1694, p. 21, 58; Doc's *Col. History N. Y.*, VII, p. 907; *Laws N. Y.*, 1752 (Nov. 3, 1740); *Laws N. Y.*, 1774 (Dec. 12, 1753.)

⁵N. Y. Col. MSS. 33; Doc'y *History N. Y.*, I, p. 477.

⁶Doc'y *History N. Y.*, I, p. 703.

During the ten years preceding the Revolution the duties and excise had netted \$13,500 and \$2,500 (£5,000 and £900) on an average.¹ The Colonial revenue from goods sold at auction, and from hawkers' and pedlars' licenses averaged £1,000 annually during this last period.

Tax Laws of the Colonial Assembly.

We can now return to the property tax and trace its development at the hands of the Colonial Assemblymen. After organizing and accepting the royal Charter of Liberties in October, 1683, they passed on November 1st, 1683, a general Tax and Assessment Law which deserves especial attention as the first of its kind. It is entitled "An Act for the defraying of the publique and necessary charge of each respective City, Towne and County throughout This Province and for maintaining the poor and preventing Vagabonds,"² and reads :

"Bee It Enacted by the Governour Councill and Representatives in Generall Assembly and by the Authority thereof, That annually and once every yeare there shall be Elected a certaine number out of Each respective Citty, towne and County, throughout this province, To be Elected and Chosen by the Major part of all the freeholders and freemen, which certain number Soe duely Elected, shall have full power and authority to make an Assesement or certaine Rate within their respective Cittyes, Townes and Countyes, annually and once every yeare, which assessment and certaine rate soe Established as aforesaid shall be paid in to a certaine Treasurer, who shall be Chosen by the Major part of all the freeholders and freemen of Each respective Citty, Towne and County ; which Treasurer soe duly Chosen shall make such payment for the Defraying of all the publique and necessary Charges of Each respective place above mentioned, as shall be appointed by the Comiconers or their President, That shall bee appointed in Each

¹*Journal General Assembly N. Y.*, 1766-76; Valentine's *Manual* for 1851, p. 391.

²Dongan's *Laws*, State Library, Albany, p. 26.

respective Citty, Towne and County, within this province for the Supervising the publique affairs and Charge of Each respective Citty, Towne and County aforesaid. And bee It further provided by the authority aforesaid, That the Treasurer for Each respective Citty, Towne and County shall keep a distinct booke of accounts Containing a perticuler account of all the moneys, rates and Assessments aforesaid, And alsoe of all disbursements and payments of money by warrants aforesaid, and once in Every yeare he shall bring his accounts to such persons as shall be appointed for the Audit of the same under the penalty of one hundred pounds, Except prevented by death or Sicknesse. And farther, whereas it is the Custome and practice of his Maties Realme of England, and all the adjacent Collonyes in America, That Every respective County, Citty, Towne, parish and precinct doth take care and provide for the poor who doe inhabit in their respective precincts aforesaid, Therefore it is Enacted by the authority aforesaid, That for the Time to come the respective Comiconers of Every County, Citty, towne, Parish, Precienct aforesaid, shall make provision for the maintenance and Support of their poor respectively.

"And for the Prevention and discouraging of vagabonds and idle persons to come into the province from other parts, and alsoe from one part of the Province to another, Bee it Enacted by the authority aforesaid That all persons That shall come to inhabit within this Province or any part or place thereof and hath not a vissible Estate, or hath not a manual Craft or occupacon, shall before he be admitted an Inhabitant give Sufficient Surety That he shall not be a burthen or Charge to the respective places he shall come to inhabit in, which Security shall continue for two yeares, Provided Alwayes That all those that have manual crafts or occupacon may at all times come and inhabitt in any part within this province, and be alwayes admitted, Provided he maketh Applicacon Eight dayes after his arrivall into any Citty, Towne or County aforesaid unto such person or persons as are appointed for the Governing the respective parts aforesaid And alsoe all vessells That shall bring any passengers into this Province, the Master of any such Vessells shall within four and twenty houres after arrivall bring a list of all such Passengers he brings into this province with their quality and Condicons unto the Cheife Magistrate of Each respective Citty, County, towne aforesaid, under the penalty of tenne pounds Currant money of this Province, Alwayes provided That if any Vessell bring in any person not qualified as aforesaid, nor able to give Surety for their well demeanour, That then and in such case the Master of said Vessell or vessells shall be oblidged to transport all such persons to the place from whence they came, or at least out of

this Province and dependencies, And alsoe if any Vagabonds beggars or others remove from one County to another and cannot give Security as aforesaid, It shall be lawfull for the constable to return such persons to the County from whence they came."

The close relation existing between local taxation and the maintenance of the poor is noteworthy as a parallel to the development of English local taxation.¹ A great deal of attention is given to the mode of collecting the tax and to the treasurer in the law, a faint reminder of the voluntary contributions.

The collectors and treasurers were at first not very trustworthy officials, and numerous acts were intended to force those "who have been empowered to receive any . . . moneys, who shall not make due payments of the sum . . . to make satisfaction . . . out of . . . their owne proper estate, and alsoe to pay tenne pounds damage for every hundred pounds which they shall be found in arrears . . . " ²

Later laws brought home the loss incurred by dishonest officials to the taxpayers, who had elected them. In the case of New York City "the inhabitants of such Ward, as have chosen such collector or constable so offending shall make good the Loss and Damage in that Behalf, by a fresh levy upon themselves, and not upon the inhabitants of the whole city, as has been formerly."³

Similar laws were passed for other counties.⁴ This difficulty of obtaining trustworthy officials was partly

¹ Cf. Roger *Economic Intep. History*, p. 479 ff. Wagner *Finanzw.* III, § 76, s. 173 ; § 159, s. 351.

² Act Oct. 27, 1684, Dongan's Laws, p. 56.

³ Act July 21, 1715.

⁴ Richmond, July 24, 1724; Westchester, April 11, 1769; Dutchess and Ulster, April 3, 1775.

overcome in time, perhaps by requiring bonds on entering upon office. The New York City sheriff's and chamberlain's bonds run back to 1740 and 1748 and amounted then to £1000 (\$4,800), forty years later to £2000 (\$9,600).¹ However as late as 1772 the Colonial treasurer misappropriated the funds entrusted to him, and speculated in imported goods which were late in arriving and thus led to his exposure. He excused himself by saying, "I thought it would be a public benefit to circulate the surplus in a commercial way." Great consternation followed in the Assembly. Resolutions condemning such practices were passed, but the treasurer it seems was left unmolested.²

A second and much more serious difficulty very soon appeared. An impartial and correct assessment proved to be an impossibility. In 1692 the Assembly addressed a petition to the Governor which reads :³

" . . . that there may be a certain method for the equal and proportionable assessing of subsidies, We doe pray that his Excell. would appoint Commissioners in each respective County for the making an Estimate of their Estates, that for the future there may not be such uncertaintyes."

This attempt to do away with a difficulty which is inherent in the character of the property-tax, by interference and regulation on the part of the higher authorities, appears again and again in New York history and is at present embodied in the institution of State and County Boards of Equalization.

Another attempt, but of a different kind, to do away with the difficulty of a correct assessment, is that of establishing fixed values at which all kinds of property are to be assessed, which appears in vary-

¹Record Room, Finance Department, New York City.

²Journal N. Y. Assmby 1766-76. Feb. 19, 1772.

³Journal Legislat. Council, p. 23, Sept. 9, 1692.

ing form in the tax laws of the eighteenth century. Thus it was proposed in 1693¹ to assess arable and pasture land according to its annual yield, and other property, such as slaves, horses, cattle, sheep and goats, at varying sums. A similar law was passed on September 29, 1709 and renewed in 1710 and in 1711.

But such a cast-iron assessment law did not suit the easy-going methods of the people, and the law soon fell into disuse. In 1775 complaint is made that "the method heretofore practiced for the taxation of Estates in the County of Orange hath not been as equal and just as it is conceived it might be,"² and an elaborate schedule is drawn up of the values at which each kind of property should be assessed. The tax-payer was to give an account of his land and other property, and a penalty was provided as usual for cases of concealment.

The general assessment laws of 1691, 1701 and later years are modelled after the law of 1693 discussed above.³ The election of two or more freeholders to "assess and establish a certain rate upon each of the Freeholders and Inhabitants within their respective towns," the election of a supervisor, treasurer and collector, and provision for levy by distress in case of refusal to pay are the salient features of these laws. The general law of June 19, 1713, regulating the election of assessors remained practically unchanged and in force till Revolutionary times.

By the end of the seventeenth century the property tax had become well established in the Colony, as is proved by the wording of the large number of tax

¹Journal N. Y. Assembly, March 9, 1693.

²Act April 3, 1775.

³Acts, May 13, 1691; Oct. 15, 1701; June 19, 1703.

laws of that period.¹ The county authorities were authorized to raise certain sums from the real and personal estate of all inhabitants of the county, either to cover the county expenses or as its contribution to the provincial expenses.

In New York City the assessment books of this period are still preserved.² In 1688 the assessment list of the city's seven wards amounted to £78,231 (\$265,000).³ A good example of an assessment list of this period is one of 1699 entitled :

"Assessments of the Estates, Real and Personal of ye Inhabitants, Freeholders and Sojourners of the City of New Yorke for the Raising of the sum of 400 lbs. (\$1350) by authority of an Act of Genll Assembly of this Province—entitled An Act for the enabling the City of New Yorke to pay their Debts and to Erect and Repair their publick buildings, the same being to be employed for the building a new City Hall within the said City and the house att the Ferry Pursuant to the Directions of the Mayor, Recorder, Aldermen and Assistants of the said City and Poorhouse of ye Publick Works and buildings made the 29th day of November 1699 at the Rate of Seaven farthings and four White Wampum in the pound (approximately 2½d in the £ or not quite 1%)."

The list is signed by two assessors for each ward and is audited by the Mayor and three Aldermen. The amount raised was £370.11s. (\$1,250).

Similar assessment lists of 1700 and later years are in existence. The taxpayer's "house," "lott," "ground" or "estate" were assessed, and evidently no attempt was made to reach his personal property. In the assessment made December 25, 1702, the

¹ Acts, May 31, 1687; Aug. 20, 1687; Sept. 2, 1689; April 19, 1692; Aug. 14, 1692; March 24, 1694-5; May 16, 1699; Minutes Common Council, Aug. 24, 1685; Sept. 15, 1685; Nov. 2, 1688; Jan. 25, 1693-4.

² Assessment Books 1699-1709; Tax Books 1709-34, N. Y. Comptroller's office.

³ Minutes Common Council, Nov. 2, 1688.

valuations range from £5 to £600 (\$17.00 to \$2,000), the latter sum occurring but once. The number of persons assessed in 1703 was 1,450, and in 1735 was 2,325. The valuation of taxable property in 1699 amounted to £46,250 (\$150,000), in 1704 to £38,900 (\$130,000) and £37,240 (\$125,000) by two different valuations, in 1715 to \$33,925 (\$110,000) and in 1722 to £40,107 (\$135,000.)

The provincial property taxes were raised by distributing them among the various counties. A glance at the quota thus raised in each county at different times gives one an interesting view of the somewhat arbitrary distribution. The quota in each county, in per cent. of the whole sum raised, amounted to: (See table on opposite page.)

Allowing for the difference of time, New York evidently increasing much faster in wealth than the other counties, it is apparent that the legislators were at times very arbitrary in dividing the sum to be raised for the province among the different counties. Only in part is this irregularity explained by the fact, that in the case of raising money for the protection of some one county, as of Albany in 1692, that county is exempted, or at least its burden is lightened, at the expense of the others. This motive is distinctly avowed in the laws of 1747: "In consideration of the present distressed circumstances of the Inhabitants of Albany, by the Ravages of the Enemy, it (the quota) being one-third less in Proportion to the last Tax of that County; the said Deduction being now laid on the other counties in proportion."

There is no need of reviewing the great mass of tax laws, general and special, passed by the

Colonial Assembly during the eighteenth century. No material progress is made in the wording and carrying out of the laws.

Complaints are often heard. The frequent regulations of levies by distress, as in 1691, 1701, 1744 and 1769, as well as the arrears in taxes mentioned in 1674, 1703, 1710 and 1711¹, indicate the great difficulty of collecting the tax.

Counties.	1688	1691	1691	1692	1702	1709	1709	1709	1709	1746	1746	1747
New York...	17	23	20	23	21.1	20	22.1	22	21.8	33	33	35
Albany.....	9.4	10	9		6	10	4.3	8.5	7.6	14	14	10
Kings.....	11.1	15	13	14	14.8	12	18.2	14	14	6	5.8	6.1
Queens.....	11.1		13	15	18.5	19	16.1	15	17.6	11	11	11.7
Suffolk.....	17	20.2	17.5	20	18.5	17.2	17	15	17	10	10	10.4
Westchester.	7.2	8	7	8.5	6.2	6	6	8	7	5	5.2	5.8
Richmond...	7.2	6.9	6	4.5	4.5	4	5.6	5	5	3	3	3.2
Orange.....	.3	.85	.75	1	2.2	1.6	1.5	2.4	1.6	3	3	3.5
Ulster.....	16	13.9	12.5	14	7.2	8	7.8	8	9	8	9	9.5
Duchess.....					.9	2.2	1.1	1	1.6	4	4	4.3
Dukes.....	1.5	1.4	1.25									
Notes.....	1	2	3	4	5	6	7	8	9	10	11	12

¹ Act, May 3, 1688.

² *Laws N. Y.*, 1694, p. 27.

³ *Ibidem*, p. 40.

⁴ *Ibidem*, p. 46 (April, 1692).

⁵ Act, Nov. 13, 1702.

⁶ *Laws N. Y.*, 1710, p. 83 (May 24, 1709).

⁷ *Ibidem*, p. 97 (Nov., 1709).

⁸ Act, Nov. 2, 1709.

⁹ *Laws N. Y.*, 1710, p. 103 (Nov. 12, 1709).

¹⁰ Act, May 3, 1746.

¹¹ Act, July 15, 1746.

¹² Act, Nov. 25, 1747.

The tax legislation of the last century was characterized on the one hand by a desire to make the existing tax system more effective, and on the other hand by the anxiety it displayed not to hurt the feelings of the taxpayer. Thus the above-mentioned measure of fixing certain values at which different kinds of property were to be assessed was again and again adopted, always to be repealed or to fall into disuse soon afterwards, owing to the severe pressure it brought to bear upon the unfortunate taxpayer. Either the ignorance or the good will of the assessor has always stood in the way of assessing property at its full market value. These shortcomings are of course encouraged by the method of electing assessors, and are therefore as much due to the laxity of conscience in the community as to the assessors themselves.

The Assembly repeatedly sought to spur on the assessors to the fulfillment of their duty by changes in the wording of their oath of office. In 1691 they were bound by oath: "Well, truly, equally and according to their best understanding to assess and rate the Inhabitants, Residents and Freeholds of the respective places for which they shall be chosen Assessors." The tax law of May, 1691, "which . . . hath been by experience found to be very inconvenient and burdensome to the inhabitants of

¹ *Laws N. Y.*, 1694, p. 29; Acts, Oct. 18, 1701; May 19, 1744; May 20, 1769; Records Common Council, Feb. 24, 1674; Governor's Message, Oct. 14, 1703; *Laws N. Y.*, 1726; Minutes Common Council, Jan. 19, 1710.

² *Laws N. Y.*, 1694, p. 99; Cf. *Laws N. Y.*, 1710, p. 103 (Nov. 12, 1709).

this Province, and hath occasioned many Heats, Animosities, Strifes, and Debates and other differences¹ was amended in May, 1703, "forasmuch as many Disputes, Cavils, controversies and Mistakes have happened and been occasioned as well by the generality of the words as many other omissions and defects experience has found and observed in the same," and the assessors were required "Equally, Duly and Impartially to assess and make a rate for their respective Proportions, being first Sworn Equally, Duly and Impartially to make such assessment."

In a similar law of 1721,² this warning is addressed to the assessors: "You shall spare no person for favor or affection, or grieve any person for Hatred or Ill-will." This well-meant advice bears a close resemblance to the Pennsylvania assessor's oath of the same period:³ "Thou shalt well and truly . . . cause the rates and sums of money to be duly and equally assessed and levied according to the best of thy skill and knowledge; and herein thou shalt spare no person for favor or affection, nor grieve any for hatred or ill-will."

But the legislators were not always satisfied with such vague and well-meant admonition, and in 1764 the following assessor's oath was framed:⁴ "I, A. B., do swear upon the Holy Evangelists of Almighty God, that I will well and truly, equally and impartially, and in due proportion, according to the best of

¹ Act October 18, 1701.

² Act July 27, 1721: "An Act for the more Equal and impartial assessing the Minister and poor tax to be raised in New York, Queens, Westchester and Richmond counties."

³ Worthington, *Finances of Pennsylvania*, p. 78.

⁴ Act October 20, 1764.

my understanding, assess all the whole Estates, real and personal, of all the Freehold's, etc., within the city of Albany. So help me God."

The provisions regarding the manner of obtaining the value of assessable property always remained indefinite. The law of March 19, 1774, goes as far as any in prescribing that "Assessors . . . shall . . . make an assessment in the manner following, to wit: they shall proceed from house to house, throughout the said county, till they have gone thro' the whole, and shall make out a true and exact List of all the names of the Freeholders and Inhabitants of the said county, and against the names of every such person shall set down the value of all his or her estate, real and personal, as nigh as they can discover the same to be within the same county."¹

The democratic spirit of our country has always been opposed to a strict enforcement of the assessment laws. Every attempt to make their provisions more stringent has been half-hearted. A self-valuation under oath by the taxpayers has never been attempted in New York. The constitution of California contains a provision (Art. XIII, Sec. 8) requiring "each taxpayer . . . to make and deliver to the county assessor, annually, a statement, under oath, setting forth specifically all the real and personal property owned by such taxpayer, or in his possession." . . . The Political Code of the State (Part III, Title IX, § 3629-3633) enlarges this provision. Such treatment of the taxpayers was and is unknown in New York. In 1770 it was thought sufficient to provide² that "every person, subject to

¹Cf. Act Dec. 17, 1743.

²Act Jan. 27, 1770.

such tax or charge shall at all times, when required by the assessors of the precinct wherein he resides, or either of them, give him or them a view of all the improved land in his occupation and a just account of all the horses, cattle and chattels, which are his property and ought to be subject to such tax or charge." But the saving clause was added: "Provided always that nothing herein contained shall be construed to oblige any person to give in any account of any sums of money due to him, or of his household furniture, jewels, plate or wearing apparel."

Concealment of property was always subject to a heavy penalty,¹ but was probably never enforced any more than the demand for the account of his property from the taxpayer.

The utter impossibility of reaching the great mass of personal property which has become so painfully evident in the tax history of this century, was early recognized in colonial legislation. As long as taxable property was almost entirely included under the categories, land, houses, cattle and agricultural implements, it was a matter of no great difficulty to reach it and assess it at nearly its true value. But as soon as movable property began to increase under the stimulus of trade and industry, the difficulty became greater and greater of forcing non-land-owners to bear their just share of the public burdens.

The earliest attempt to obviate this difficulty is to be found in the legislative measures directed against itinerant merchants. In addition to those cited above, we may mention the law of 1741, (renewed in 1745

¹ Cf. Act Jan. 27, 1770.

and 1755),¹ which obliged "all persons that shall come to inhabit in the city of New York, in order to expose any goods, wares or merchandise to sale at any time after the annual assessment made for the tax for the maintenance of the minister and poor of the said city, to pay their due proportion to the same."

In Albany (and similarly in Schenectady) the assessors² were "to inquire whether anybody moves into Albany after the date of assessment to do business. . . . they must demand a true account on oath or affirmation of the value of their goods which they bring into the ward, and shall rate them like other inhabitants."

On the one hand, there must have existed a class of poor as early as 1683, as is indicated by the general assessment law of that year; on the other hand there must have been a well-to-do class, whose property was largely personal, that is, movable. At first freeholders were the only taxpayers.³ As soon as the class of property owners was no longer co-extensive with the class of freeholders, the laws recognize as taxpayers the four classes of freeholders, inhabitants, residents and sojourners. Residents apparently included subjects that were possessed of personal and not real property, while sojourners, of course, included only temporary residents of the province. Similar divisions of property owners, *i. e.* of taxpayers, are noted in many tax laws of the seventeenth century.⁴

¹Acts Nov. 27, 1741; May 14, 1745; Sept. 11, 1755; Cf. *Laws N. Y.*, relating to N. Y. City, 1833, pp. 4-5.

²Act, Feb. 19, 1756.

³Cf. Act, May 24, 1709.

⁴Acts, Nov. 12, 1709; July 24, 1724; July 5, 1755; Oct. 20, 1764; January 31, 1775; Minutes Common Council, Jan. 10, 1769.

The form of the eighteenth century tax laws remained almost unchanged. The county officers superintended the finances of the county as well as of the subordinate corporations. They decided on the county rate, and arranged for the election of town assessors. Of the aggregate property as assessed by the latter, a certain percentage was raised to cover the town and county expenses, or, as the county's quota to a provincial tax as fixed by the Colonial Assembly.

Oliver Wolcott's report on Direct Taxes (Dec. 14, 1796,)¹ though covering only State taxes, applies as well to the lesser corporations and furnishes us with a review of the condition of local taxation in the United States toward the end of the last century. The tax system of New York is described as follows:

"No objects of taxation are defined in the laws nor any principles of valuation prescribed. The amount of a tax upon the State being declared, the Legislature determines the quotas to be paid by the counties, the supervisors of counties determine the quotas of towns, which last are apportioned to individuals by assessors; no provision has been made for requiring a disclosure of the property owned by individuals; of course, all assessments by the Legislature, by supervisors and assessors are determined by a discretionary estimate of the collective and relative wealth of corporations and individuals."

In Rhode Island, Delaware and Maryland the property tax had been developed on similar lines. In the other States certain objects of taxation were defined and their valuation regulated by law. In some States land was divided into various classes, according to quality and mode of cultivation, each class being taxed at a fixed rate. In other States horses and cattle were specially taxed. In New

¹American State Papers, vol. 7. (Finance, vol. 1), No. 100, p. 414 ff.

England and in some of the Southern States a pole or capitation tax was raised. However the tax systems of the various States differed, the principle at the foundation of all of them was the same, namely the principle of finding the measure of an individual's ability to pay taxes in the aggregate amount of property in his possession. In New York this principle seems to have been most strictly adhered to.

IV.

1777-1890.

The Revolution and the establishment of the Confederation brought about little or no change in the New York tax system. The Federal Constitution of 1789, however, introduced a factor which was of lasting influence on the development of State and local taxation. By constitutional provision the States once for all lost their right to derive revenue from export, import and tonnage duties. Aside from these direct provisions the State and local taxes were left to compete with the Federal taxes.¹ In this competition the Federal government has always proved itself the stronger party. By adopting a system of indirect taxes (duties and internal revenue taxes), the Union took possession of the most copious and easily managed sources of revenue and drove New York, like the other States, involuntarily to the extension of its property tax. The framers of the Constitution did not fully realize that its tendency would be to develop federal and local taxation on such different lines. Still the *Federalist* acknowledges that² "the Laws

¹Von Holst, *Staatsrecht*, d. v. St. A. ss. 66, 160.

²The *Federalist*, No. 34 (Jan. 8, 1788.)

cannot . . . in a legal sense interfere with each other, even in the policy of their different systems. An effectual expedient for this purpose will be mutually to abstain from those objects which either side may have first had recourse to. . . . A small land-tax will answer the purpose of the States, and will be their most simple and fitting resource." The future extent of local direct taxes was certainly not appreciated by the statesmen of 1787.

In the city of New York the revenues from other sources than the property tax had been developed during the Eighteenth century. Ferry rent had steadily increased from £145 (\$480) in 1701 to £1,362 10s. (\$3,700.00) in 1799; dock rent from £25 (\$85) in 1703 to £4,155 5s. 9½d. (\$1,100) in 1799; market rent from £72 10s. (\$240.00) in 1736 to £790 10s. (\$2,100); house and land rent from an insignificant sum to close upon £1,000 (\$2,300); water-lot rent from £33 1s. 2½d. (\$100) in 1735 to £927 13s. 1d. (\$2,500) in 1800; tavern licenses from £51 10s. 3d. (\$170) in 1702 to ten times that amount toward the end of the century. The slaughter-house, the rope-walk, the powder magazine, the poor-house, the brick-yard and the public crane were all at times sources of revenue. But all these sources of revenue were insufficient to cover the expenses of a city of growing importance.¹ A wiser policy would have improved them and made them more abundant, but as it was, the property tax, which at first was merely supplementary to these "Sundry Branches of City Revenue," as they are called in the New York City Ledger, came gradually to overshadow them in importance. But more of this below.

¹N. Y. City Journals and Ledgers, Minutes Common Council, Dutch Records, City Hall.

Another factor which has been of influence on the development of the New York property tax is the former close relation between full citizenship and ownership of land. The right of suffrage was based on the possession of land before the arrival of the English.¹ By the Charter of Liberties (1683)² "every freeholder within this province, and freeman in any corporacon shall have the free choice and vote in the electing of the representatives, . . . and by freeholders is understood every one who is so understood according to the laws of England." "Freeman of any corporacon" applies to those who had purchased the freedom of the city of New York, merchants invariably paying twice or three times as much as others.³

By Act of the Assembly, April, 1698, the right of suffrage was limited in a similar way to resident freeholders of £40 (\$194)⁴, "Always provided That the Free men in the corporations of the cities and counties of New York and Albany have liberty to vote in their respective corporations, provided that they have been freemen of the said corporations. and have actually dwelt there three moneths before the Test of any such Writ of Election"

The first New York State Constitution (1777), like the constitutions of the other States, established property qualification for voters, which though

¹Elting, *Dutch Village Communities*, p. 35.

²State Library, Albany; Brodhead, *History N. Y.*, II, p. 659, Act April, 1691: "And by Freeholders is to be understood every one who shall have 40s. per annum from freehold."

³N. Y. City Journal No. 2, 1696-1736; N. Y. City Ledger, 1700-1760; Minutes Common Council, II, 1691-1762.

⁴Cf. Contested Election Cases, involving voters' freehold, Nov. 18, 1768; May 18, 1769; Journal N. Y. Assembly and Sept. 29, 1701; Minutes Common Council.

amended in 1822, remained in force till 1826, as it did in many other States till a later date.¹

During two centuries full rights of citizenship were enjoyed only by owners of land, which is synonymous with the well-to-do classes, for until the nineteenth century all property was primarily connected with the possession of land. It was natural then that the citizen should pay his share of the public charges according to the size of his property. The democratic tendency of this century has done away with property qualifications to the rights of citizenship (barring the still existing poll-taxes); and although the property tax still remains, it no longer reaches the whole body of citizens. The taxpayers as a class are not coextensive with the voting population. A curious reaction is seen in the attempt to put city suffrage on a property basis.²

State Tax Legislation Since 1777.

The various State Constitutions which were framed at the suggestion of the Continental Congress, during the '70's and '80's of the last century, contain with one exception no reference to any principles of taxation. Our Revolutionary heroes were too much occupied with framing Declarations of Natural Rights to give much thought to matters of taxation. However, the Massachusetts Constitution of 1780 lays down the general principle, that³ "each individual of the society has a right to be protected by

¹Dougherty, *N. Y. Constitutions*; Bernheim, *Ballot in N. Y.*, p. 132. Bryce, *Am. Commonwealth*, II, p. 53; Hitchcock, *State Constitutions*, p. 27; Stimson, *American Statute Law*, §244, 252.

²Adams, *Public Debts*, p. 359. Ford, W., *American Citizen's Manual*, p. 77.

³Part I, Declaration of Rights, X, Part II, ch. 1, § 1.

it, in the enjoyment of his life, liberty and property, according to standing laws. He is obliged consequently to contribute his share to the expenses of this protection." It further provides for a valuation of estates for purposes of taxation every ten years at least.

The Vermont Constitution (Chap. I, Art. 9) curiously enough provided, and still provides, that previous to any law for a tax, the purpose for which the tax is levied ought to appear of more importance to the community than the money would be if not collected.¹

The New York Constitution of 1777 provided that municipal and county officials should continue to be eligible. Aside from this indirect provision no reference is made to taxation. It was left to the State Legislature in its first dozen sessions to give the old established property tax a new lease of life. Thus "An act for defraying the public and necessary charge in the respective counties of this State." passed March 7, 1788, shows no advance on former laws. It enacts:

"That the assessors of each respective city, town and place in every county of this State, shall yearly and every year, as soon as conveniently may be after they are chosen and qualified, proceed to inquire into the value of the real and personal estate of every freeholder and inhabitant within the city town or place, whereof they are assessors; and shall make out a true and exact list of the names of the freeholders and inhabitants of the respective cities, towns and places, for which they shall be chosen assessors; and of such who have estates therein, and do not reside there; and opposite to the names of every such person shall set down the real value of all his or her whole estate, real and personal in the same city town or place, as near as they can discover the same and shall set down the value of the real estate of each person, as aforesaid, in one column and the value of the personal estate of each person, as

¹Ely, *Taxation in Am. States and Cities*, p. 397, quoting Stimson, *American Statute Law*, 1886, §330 B.

aforesaid, in another column of the same list or assessment, leaving room sufficient opposite thereto to insert the sum each person is to pay."

No material advance has been made in the form of the tax laws during the first century of State government. In the case of State taxes as well as in the taxes of the subordinate corporations the proper officials are authorized by the Legislature to raise a certain sum on, or a certain percentage of the estates of all the inhabitants within their respective districts.

A tax of March 28, 1778, made a distinction between real and personal property and taxed the former more heavily than the latter. This proceeding was however exceptional.

In 1799 one more attempt was made to reach the true value of property in the assessment list. The law of April 1st, of that year, provided "that the valuation of houses and lands within this State lately made under the authority of the United States shall as soon as the same be compleated, be deemed to be the value of all such houses and lands for the purposes" of taxation. Real estate, as is seen, was only affected by this law, for the Federal census takers paid particular attention to this class of property. As in former years this law also fixed the value of various kinds of personal property, such as cattle, carriages and slaves, and demanded a list of the same from the owner. But as had always been the case the law proved ineffective, and two years later the assessors were allowed to alter the Federal census valuation of real estate as circumstances required¹, and as regards personal property,

¹ Act, April 8, 1801.

they were, as usual, admonished to ascertain its value according to the best evidence in their power.

We need not go minutely into the tax laws of the present century. The following are some of the general provisions which have a decided bearing on the development of the property tax:

An elaborate law of 1823¹ provides that "all real and personal property shall be valued by the assessors for the purpose of taxation at the value they would appraise such estate in payment of a *bona fide* debt due from a solvent debtor." The method of assessment, which was to be at the place of residence of the taxpayer, is described. Exemptions like those now in force are provided for. They covered Federal and State property, the property of colleges and academies, schools, churches and public libraries, almshouses and similar buildings, and the personal property of clergymen to the amount of \$1,500. The reduction of his assessments by the taxpayer, on his taking oath, is made possible. Incorporated companies are to be taxed like individuals, the cashier paying the taxes and deducting them from the dividends. Commutation was made possible by the payment of 10 per cent. of the annual net income of the company. Special provisions were made for New York County.

The general provisions for taxation in force in 1829, as seen in the Revised Statutes of that year, were as follows:

All lands and all personal estate within the State, whether owned by individuals or corporations, was liable to taxation, subject to the same exemptions as in 1823. Land, synonymous with real estate, included

¹*Laws N. Y.*, 1823, ch. 262, p. 390.

the land itself, buildings, trees, underwood, mines, minerals, quarries and fossils. Personal property included household furniture, monies, goods, chattels, debts due from solvent debtors, public stocks and stocks in moneyed corporations. The taxpayer was to be taxed at his or her residence. Assessors were bound to abide by an affidavit regarding the value of his property made by the taxpayer.¹

Regarding the taxation of moneyed corporations, their real estate was taxed in the town or ward where it lay; their personal property in the town or ward where the corporation's principal office was situated. Manufacturing and Marine Insurance companies, whose net annual income did not exceed 5 per cent., could commute their taxes by annually paying 5 per cent. of their net income to the County Treasurer. Turnpike, bridge and canal companies, whose annual income was less than 5 per cent., were exempt from all taxes.²

All these provisions were renewed in the following editions of the Revised Statutes: 1835, 1846, 1852, 1859 and 1875, with the exception of the commutation clause, which was repealed April 15, 1857. No material additions were made to the general tax laws before 1880.

The Present System.

The present system of assessing and collecting the property tax in New York State can be described as follows: (The unimportant special provisions regarding New York City are disregarded.)³

¹*Rev. Stat.* 1829, Vol. I. ch. III; Title 1, § 1, p. 387; § 3; Title II, § 1, p. 389; § 15, p. 392.

²*Ibidem*, Title II, § 6, p. 389; Title IV, § 1; § 6, p. 415.

³Davies, *Taxation*; Cooley, *Taxation*; Burroughs, *Taxation*; *Rev. Statutes N. Y.*, 8th ed. 1889, chap. xiii; Ely, *Taxation in American States and Cities*; Bryce, *American Commonwealth*, II, pp. 127-136, 271-3.

All lands and all personal property within the State, whether owned by an individual or by a corporation, are liable to taxation, with the usual exemptions covering Federal and State property, church and school property, prisons and almshouses, the property of charitable associations, of clergymen up to \$1,500, and lastly, all property exempt by law from levy and sale by virtue of an execution. Theoretically, every property-holder pays a tax proportioned to the aggregate amount of his property as far it is situated within the State.

Land or real estate includes:¹

"The land itself above and under water; all buildings and other articles and structures, substructures and superstructures erected upon, under or above, or affixed to the same; all wharves and piers, including the value of the right to collect wharfage, crantage or dockage thereon; all bridges; all telegraph lines, wires, poles and appurtenances; all surface, underground or elevated railroads, and the iron thereon; branches, switches and other fixtures permitted or authorized to be made, laid or placed in, upon, above, or under any public or private road, street or grounds; all mains, pipes and tanks laid or placed in, upon, above or under any public or private street or place; all trees and underwood growing upon land; and all mines, minerals, quarries and fossils in and under the same, except mines belonging to the State."

An examination of the evolution of this voluminous definition would furnish an excellent review of the difficulties connected with the assessment of various kinds of property.

Personal property includes:² "All household furniture; monies; goods; chattels; debts due from solvent debtors, whether on account, contract, note, bond or mortgage; public stocks; and stocks in monied corporations; . . . and such portion of the capital

¹ *Rev. Stat.* 8th ed., Part I, ch. xiii, Title 1, Sect. 2, p. 1082.

² *Ibidem*, Sect. 3, p. 1083.

of incorporated companies, liable to taxation on their capital, as shall not be invested in real estate.”

These definitions are of great importance in connection with the taxation of corporations, as we shall see.

In each township a board of assessors is elected, which is empowered to draw up the assessment list of its district. On this list is entered the name of the taxpayer, the amount of his real estate, its full value and the full value of his personal estate after deducting all *bona fide* debts owed by him. It is to be noticed that no such deduction is made in the case of real estate. The assessment of taxable property is to be made at its full and true value as it would be appraised by the assessors in payment of a just debt due from a solvent debtor, which principle is embodied in the assessor's oath of office.

In assessing a private corporation a difference is made between its real and personal property as was indicated above. Its real property appears in the assessment list of whatever township (or ward) it is situated in, but its personal property appears in bulk in the assessment list of the township in which the corporation has its principal office. The value of a corporation's personal estate is obtained by deducting from its paid-up capital the amount invested in real estate, the amount invested in stocks of other corporations subject to the same tax, the amount invested in stocks exempt from taxation and that amount of its capital which may be owned by the State or some association not liable to taxation.

By the first of August of each year the township assessment lists are complete and are open to inspection for twenty days. Any taxpayer, if aggrieved,

can appear before the assessors and petition for an abatement, in which case he is put under oath and examined by them.

As long as the assessment lists are in the hands of the assessors the taxpayer can have mistakes in his assessment corrected without going to court. But as soon as the assessment lists have been forwarded to the county officials, a correction of supposed errors is only possible by application to the courts. Two lines of action are open to the aggrieved taxpayer. He can either obtain an injunction to restrain collection, or a writ of *certiorari* to review the action. The former method is condemned as mischievous and tending to embarrass the operations of government.¹ "Only in case of great necessity is an injunction to restrain collection of a tax to be granted."²

The other means of redress available to the aggrieved taxpayer is to obtain a writ of *certiorari* from the State Supreme Court. This "may be allowed on the petition of a person or corporation assessed and claiming to be aggrieved, to review an assessment of real or personal property for the purpose of taxation made in any town, ward, village or city of this State, when the petition shall set forth that the assessment is illegal, specifying the grounds of the alleged illegality, or is *erroneous by reason of overvaluation*, or is *unequal* in that the assessment has been made at a *higher proportionate valuation than other real or personal property on the same roll* by the same officers, and that the petitioner is or will be injured by such alleged illegal, erroneous or unequal assessment."³ We have italicised portions

¹Cooley, *Taxation*, pp. 700-4.

²Rome, Watertown R. R. Co. vs. Smith, 39 Hun. 332 (1886.)

³*Laws N. Y.* 1880, ch. 269, p. 402. *Revised Statute*, 8th ed. p. 1114.

of the law to point out how smooth the path of the aggrieved taxpayer is made. He need not prove that his property was overvalued, but merely that his property was overvalued when compared with his neighbor's assessment.

The township assessors, after completing their task, forward the assessment lists to the County Board of Equalization. This board examines the assessment lists, which together make up the county assessment list, and can add to or deduct from the aggregate valuation of real estate in any township in order to bring about a just relation between the valuations of real estate in the various townships, but in no case can they reduce the aggregate valuation of the county as made by the assessors. It is to be noticed in the first place that the revision of the personal estate valuation does not come within the powers of the County Board of Equalization, and in the second place that any change in a township assessment list made by the Board affects the individual taxpayer only indirectly by raising or lowering the quota of the county and State tax which his township is called on to pay.

A position similar to the County Board of Equalization is occupied by the State Board of Equalization.¹ It consists of three State assessors and six of the State officers, and supervises the distribution of the State taxes among the various counties. This Board revises the county assessment lists and can increase or diminish the aggregate valuation of real estate in any county, in no case, however, reducing the aggregate valuations of all the counties below the figure returned by the county officials. It

¹Established in 1859. *Laws N. Y.* 1859, ch. 312, p. 702.

is seen, as in the case of the County Board, that the State Board of Equalization can only revise real estate valuations, and that any change made by the Board only affects the amount of an individual county's share of the State tax.

This share is ascertained by multiplying the State tax rate, as fixed by the Legislature, with the revised aggregate county valuation. This amount is added to the county tax levy and is divided among the townships. Each township adds its share of the county and State tax to its own township tax, which is then raised by the collectors. The amount raised is then divided in the proper ratio between Township, County and State.

In reviewing the history of the property tax one is impressed with the uniformity of its development. The principle at the foundation has remained unchanged throughout two centuries, and whatever changes in form and execution of the tax have been made were due to the attempts to adapt the system to changing conditions. The present aspect of the property tax is about the same in all the States. However its development may have differed in the various States, old and new ones, they have now a common system of local taxation.¹

¹Cf. Ely, *Taxation in American States and Cities*; Report Revenue Comm. Ill. 1886; Report on Taxation, Conn. 1868, 1887; Worthington, *Finances of Penna.*; Report on Taxation in Mass., 1875; Minot, *Taxation in Mass.*; Cooley, *Taxation*; Report Auditor Dakota, 1886; Report Comptr. Cal., 1882; Report Board Equalization, Cal., 1880; Report Auditor Ala., 1882; Seligman, *Finance Statistics of the American Commonwealths*, Am. Statist. Asso., Boston, 1889.

STATISTICS.¹

The State tax which is added to the county rate and collected in the townships and wards averaged one mill in the dollar during the half century ending with the Civil war. From then till 1880 the State rate averaged over five mills, and since 1880 it has fallen to an average of two and three-quarter mills on the dollar. The list of State taxes since 1815 is as follows : (in mills)

1815	2	1845	.6	1860	3½	1875	6
1816	2	1846	.6	1861	3½	1876	3½
1817	2	1847	.5	1862	4.75	1877	3½
1818	3	1848	.5	1863	5	1878	2.9
1819	1	1849	.5	1864	5.25	1879	2.863
1820	1	1850	.5	1865	4½	1880	3.5
1821	1	1851	.5	1866	5½	1881	2.25
1822	1	1852	.25	1867	7.6	1882	2.45
1823	1	1853	1	1868	5.8	1883	3.25
1824	1	1854	.75	1869	5½	1884	2½
1825	.5	1855	1.25	1870	7½	1885	2.96
1826	.5	1856	1.75	1871	5½	1886	2.95
1842	1	1857	3	1872	9½	1887	2.7
1843	1	1858	2.5	1873	6.95	1888	2.62
1844	1.1	1859	2.5	1874	7.25	1889	3.52

¹Compiled from N. Y. State and N. Y. City Comptroller's Reports; Statement Bonded Debt, N. Y. City, Dec. 31, 1886.

The amount raised by the above State tax since 1843, is :

1843	\$ 619,694	1865	7,230,977	1878	7,941,298
1844	592,009	1866	8,517,465	1879	7,690,416
1845	655,067	1867	12,647,219	1880	9,232,542
1846	361,310	1868	10,243,317	1881	6,032,830
1847	370,557	1869	10,463,179	1882	6,820,022
1848	302,579	1870	14,285,977	1883	9,334,836
1859	3,512,284	1871	11,613,944	1884	7,762,573
1860	5,440,640	1872	19,580,882	1885	9,160,405
1861	5,586,849	1873	14,800,903	1886	9,512,813
1862	6,884,194	1874	15,727,482	1887	9,075,046
1863	7,272,274	1875	14,206,681	1888	9,089,304
1864	7,880,249	1876	8,529,174	1889	12,557,353
		1877	8,726,511		

The figures for the county and township taxes are less accessible. During the years 1840-1889 the total valuation of the State, the total amount of taxes raised on property by State, county and town taxes, and the average rate in the State of all these taxes, were as follows :

	Valuation.	Rate.	Amount.
1840	\$ 641,359,818	.....	.....
1841	655,299,530	.....	.....
1842	620,676,346	.....	\$ 4,246,488
1843	592,262,444	.....	3,965,180
1844	599,891,923	7.7 %	4,243,102
1845	605,646,095	.....	4,633,821
1846	616,824,955	7.53	4,647,462
1847	632,699,993	7.65	4,843,626
1848	651,619,595	8.12	5,295,458
1849	665,850,737	8.33	5,548,981
1850	727,494,583	8.67	6,312,787
1851	1,077,831,630	6.27	6,759,638
1852	1,168,335,237	6.00	7,007,688
1853	1,266,666,190	7.37	9,345,222
1854	1,364,154,625	7.06	9,636,091
1855	1,402,849,304	8.32	11,676,172
1856	1,430,334,696	8.90	12,742,845
1857	1,433,309,713	10.57	15,163,138
1858	1,404,907,679	10.98	15,425,539
1859	1,404,913,679	11.64	16,353,287
1860	1,419,297,520	13.35	18,956,024
1861	1,444,767,430	14.15	20,402,276
1862	1,449,303,948	13.42	19,456,024
1863	1,454,455,817	15.84	23,046,801
1864	1,500,999,877	26.56	39,873,943
1865	1,550,879,685	29.63	45,961,441
1866	1,531,229,636	26.49	40,568,245

	Valuation.	Rate.	Amount.
1867	1,664,107,725	27.95 %	46,578,922
1868	1,766,089,140	25.08	44,298,436
1869	1,860,120,770	24.82	46,161,531
1870	1,967,001,185	25.55	50,328,684
1871	2,052,537,898	22.22	45,674,487
1872	2,088,627,445	30.41	63,511,936
1873	2,129,626,386	24.16	51,444,536
1874	2,168,307,873	26.64	57,811,382
1875	2,367,780,102	24.04	50,328,684
1876	2,466,267,273	21.14	52,148,368
1877	2,755,740,318	18.23	50,237,164
1878	2,738,378,600	17.54	48,047,242
1879	2,686,139,133	17.55	47,148,475
1880	2,637,869,238	18.62	49,117,782
1881	2,681,257,606	18.38	49,286,773
1882	2,783,682,567	17.09	47,573,820
1883	2,872,257,325	17.73	50,936,789
1884	3,014,591,372	17.37	52,372,707
1885	3,197,163,785	18.50	57,262,650
1886	3,224,682,343	18.02	58,110,079
1887	3,361,128,177	17.05	57,331,192
1888	3,469,199,945	17.47	60,639,807
1889	3,567,429,757	16.97	60,553,028

In 1850 the average tax on property per individual in the State was \$2.03; in 1860, \$4.88; and in 1880, \$9.66.

The average rate of taxation in the State (third column above) has little meaning, for the rate of county and town taxes varies very much in different parts of the State.

The following is the amount of property tax in some of the counties of the State in 1889 and the aggregate rate of such taxes :

COUNTIES.	POPULATION IN 1880.	COUNTY TAX.	TOWN TAX.	STATE TAX.	TOTAL.	Rate in Mills.
New York.....	1,206,299	25,459,710	.....	5,685,660	31,145,370	19.27
Kings.	599,495	2,042,074	9,356,095	1,372,270	12,770,439	32.25
Albany.	154,890	396,462	968,175	315,182	1,679,820	18.76
Hamilton.	3,923	13,014	11,014	3,646	27,674	26.71
Queens.....	90,574	195,415	139,122	165,353	499,889	10.64
Oneida.....	115,475	249,862	131,180	202,999	584,041	10.12
Rensselaer	115,328	228,400	180,926	218,750	628,075	10.10
Ontario.....	49,541	68,806	63,198	104,555	236,559	7.96

A table of the revenues of New York City (1805-1889) from the property tax and from other sources is appended. We have placed the municipal revenues from the property tax as well as from other sources in parallel columns in order to emphasize what was said above concerning the enormous increase, relative as well as absolute, of the property tax, when compared with the other sources of revenue. During the years 1840-1887 the revenue from the property tax increased twenty-four fold while rents increased but four fold, dock rent twenty fold and ferry rent seventeen fold. The great increase in the revenue from excise licenses is offset by the provision,¹ which requires the money thus raised to

¹Laws N. Y., 1874, ch. 642.

The following is a table similar to the one above, detailing the receipts of the State Government during the fiscal year ending September 30th, 1889:

From Public Lands.....	\$7,870
Interest on moneys invested in U. S., county and town bonds and in mortgages.....	539,058
Interest on deposit.....	44,794
Federal government.....	77,792
Fees.....	393,496
Fines.....	3,136
Sundries.....	9,700

TAXES.

State Tax on property.....	\$9,102,611
“ “ Corporations.....	1,172,600
“ “ Organization of corporations..	198,982
“ “ Collateral inheritances.....	1,075,692
Pool Tax.....	27,211
Total receipts.....	\$12,652,812

REAL AND PERSONAL ESTATE IN THE ASSESSMENT LISTS.

We have examined the amount of the property tax throughout the State, and now turn to the question of the relative amount of real and personal property as they appear on the assessment lists. Since 1836 the assessed value of real property in the State has been to that of personal property as 100 is to:

1836	24
1837	24
1840	23
1844	25
1845	24
1850	24
1855	26

1860	29
1864	29
1865	34
1868	33
1870	28
1873	25
1875	20

1876	17
1878	15
1880	14
1885	12
1887	11
1888	11
1889	11

In New York City this ratio can be established for a longer series of years :

1809	15 : 100	1826	65 : 100	1864	54 : 100
1810	15	1828	48	1865	42
1811	15	1830	43	1867	50
1812	14	1832	39	1869	41
1813	17	1834	51	1874	31
1816	43	1836	32	1876	24
1817	36	1840	35	1878	22
1818	35	1845	37	1880	22
1819	30	1850	31	1882	19
1820	33	1855	44	1883	18
1821	35	1859	45	1886	18
1822	33	1860	45	1887	20
1823	40	1861	43	1888	19
1825	73	1862	43	1889	16.7
		1863	48		

The same ratio in the city of Boston has been:¹

1799	116 : 100	1828	74 : 100	1848	67 : 100
1804	111	1830	61	1850	71
1809	84	1832	71	1852	69
1814	85	1834	73	1854	77
1816	73	1836	63	1856	73
1818	75	1838	57	1858	66
1820	76	1840	56	1887	35
1822	80	1842	63	1888	35
1824	82	1844	64		
1826	73	1846	75		

¹ Municipal Charter of the City of Boston, 1859, pp. 232-233.

Curiously the relative decline in the assessed value of personal property begins in the '20's in both cities.

Judging from the valuation of property in the assessment lists, the increase and decrease of both kinds of property in the State must have been :

	Real Property.		Personal Property.	
	Increase	5½%	Increase	27%
1859—1865	Increase	5½%	Increase	27%
1865—1870	"	32	"	26
1870—1875	"	27	Decrease	6
1875—1880	"	18	Increase	11
1880—1885	"	19	"	17
1885—1889	"	16	"	3

and in the City of New York :

	Real Property.		Personal Property.	
	Increase	9%	Increase	25%
1809—1813	Increase	9%	Increase	25%
1816—1820	Decrease	10	Decrease	42
1820—1825	Increase	12	Increase	145
1859—1865	"	12	"	6
1865—1886	"	181	"	10
1880—1887	"	36	"	6

This apparently slow growth of personal property within the State, need not be commented upon. It is a well-known fact that the great mass of personal property is barely touched by the tax. As early as 1832 the New York City comptroller complains¹, that "a portion of our business population escapes enrolment on our tax lists." The State Comptroller makes a similar complaint in his report for 1849,² and since

¹Report N. Y. City Comptr. for 1832, p. 10.

²Cf. Report N. Y. City Tax Commissioners 1850, pp. 9, 25.

then, numerous comptrollers and tax commissions have called attention to this defect in the tax system. It is generally acknowledged that real estate is assessed at one-half to three-fifths of its market value under the most favorable circumstances, namely in cities, while in country districts the fraction sinks to one-third and one-fifth.¹

In general low valuations are favored by the practice of adding state and county taxes to township taxes. "Hence arises the double competition between the assessors of counties in the aggregate, and of the towns in each county, for the lowest possible valuation,"² in order to escape as much as possible of the county and State taxes.

INDEPENDENT STATE TAXATION.

This difficulty, as well as the difficulty of properly taxing private corporations, has led to the introduction, since 1880, of a system of direct State taxes, which should be independent of county and township taxation. The State treasury had been made too dependent on county finances. As was the case in New York City, other sources of revenue beside the property tax were never fully developed. Auction duties have declined from \$218,514 in 1830 to \$17,417 in 1888. Rent of public land never netted the State more than an insignificant sum; the revenue from salt duties netted a surplus as late as 1875, but they now do not cover the cost of collection, while the canals ceased to be a source of rev-

¹Cf. Report on Local Taxation, N. Y. 1871, p. 20; Report State Comptroller for 1872.

²Report Local Taxation N. Y. 1871, p. 20; Cf. N. Y. State Bar Association Report, Vol. IV, Albany, 1881, p. 148.

enue in 1882, the State pledging itself in the constitution to provide for its maintenance out of the revenue from taxation.

The corporation tax of 1880 (since then frequently amended)¹ now taxes every corporation doing business in the State, except savings banks, institutions for saving, life insurance companies, banks and foreign insurance companies, agricultural, horticultural and manufacturing or mining corporations, as follows: If the yearly dividend amounts to more than 6 per cent., the corporation pays a yearly tax to the State of .025 per cent. of its capital for every 1 per cent. dividend declared. If the dividend amounts to less than 6 per cent., the corporation pays a yearly tax of .15 per cent. of its capital, the latter being assessed at its market value. The distinction between dividends of over and under 6 per cent. is directed at preferred and common stock.

In 1887 a tax on the privilege of organization of corporations of $\frac{1}{8}$ of 1 per cent. on their capital was passed.²

A third source of revenue was found for the State in 1885 by an act³ taxing collateral inheritances.

These three sources of State revenue, entirely independent of county and town taxes, netted \$1,172,600, \$198,982 and \$1,075,692 respectively during the fiscal year ending September 30th, 1889.

¹ *Laws N. Y.*, 1880, ch. 542, p. 763; Declared constitutional, *People vs. Nat. Fire Ins. Co. of Hartford*, 27 Hun. 188 (1882); *Laws N. Y.* 1881, ch. 332, p. 454; 1882, ch. 151, p. 186; 1885, ch. 359, p. 608; 1886, ch. 266, p. 442; 1887, ch. 699, p. 907; 1889, ch. 193, p. 229.

² *Laws N. Y.* 1887, ch. 284, p. 355, amending *Laws N. Y.* 1886, ch. 143, p. 302.

³ *Laws N. Y.* 1885, ch. 483, p. 820, 1887, ch. 713, p. 921; Declared constitutional, *Matter of McPherson*, 104, N. Y. 306.

New York is not the first State to introduce independent State taxes. Pennsylvania has gone much further in this direction.¹ Since 1867 real estate is exempt from State taxation. Of the \$8,465,399 raised by State taxes in 1889, only \$747,871 were raised by the personal property tax. Taxes on corporations contributed \$3,951,927—that is almost half the State revenue—the tax on collateral inheritances netted \$1,378,454, while the rest of the State revenue was derived from fees and licenses of various kinds.²

This development of State taxes has met with favor in Pennsylvania. The same tendency is seen in other States and everything seems to point toward a similar development in New York, it being recommended in numerous tax reports.³

The Pool tax, introduced in 1887,⁴ deserves passing mention. It levies an annual tax of five per cent. upon the gross receipts for the admission to race tracks, and in return provides that the sections of the Penal Code prohibiting pool selling shall not apply during thirty days in the year to the race tracks under the authority of this law. It is to be hoped that this law will be effaced from our statute book, and soon be a thing of the past as much as government lotteries and similar sources of revenue.

¹Worthington, *Finances Penna.*

²Report Auditor General Penna. for 1889.

³Special Report N. Y. State Comptr. on Salaries, Taxation and Revenue, March, 1886, p. 7; Report N. Y. State Assessors, 1879, p. 4; Report Revenue Comm. Ill. 1886, pp. VIII-XV; Report Md. Tax Comm. 1886, pp. 56-62, 162 ff; Report on Taxation, Conn., 1887, p. 31 ff, Report N. Y. Tax Comm. March 1881, pp. 29-32, appendix, pp. 11 ff.

⁴*Laws N. Y.*, 1887, ch. 479, p. 604.

LEGAL COMPLICATIONS OF THE PROPERTY TAX.

The difficulty of assessing real property at its market value lies in the unwillingness of the assessors to set down that value. There can never be any question as to the *situs* of such property.

In the case of personal property, matters lie quite differently. First the assessor must discover personal property and establish its legal *situs* before he can assess its value. In the present day, what with the mobile character of such property, and the complications affecting its legal *situs* and the taxing powers of the different public corporations, the task of reaching personal estate for purposes of taxation has become quite hopeless.

It is generally conceded that the amount of personal estate in the State equals that of real estate, but that not more than one-fifth of the former finds its way into the assessment lists.¹ A glance at the large number of publications on the subject convinces one that the same condition prevails in the other States.²

But even if personal property is discovered by the assessors, the law often steps in the way and prevents its taxation. The constitutional provisions regarding inter-state commerce have greatly complicated the question. We cite some of the leading cases decided in the State and Federal courts.³

¹ Report Local Taxation, N. Y., 1871, p. 26.

² Ely, *Taxation in American States and Cities*; Report Board Equaliz. Cal. 1880, pp. 28, 34; 1886, p. 13; Report Ala. State Auditor 1886, p. 5; Report Special Comm. on Taxation, Conn., 1886, pp. 21, 25; Report Rev. Comm., Ill., 1886, p. II; Minot, *Taxation in Mass.*, p. 6.

³ Davies, *Taxation*, pp. 18-21. Cf. D. A. Wells, Reform of Local Taxation, *North American Rev.* 122, p. 376 (1876).

A statute of a State imposing a tax on the gross receipts of railroad companies is constitutional, though the receipts are made up in part from freights received for transporting goods from one State into another. A distinction is made between a tax on freights carried between States because of their carriage and a tax upon the fruits of such transportation after they have become intermingled with the other property of the carrier.¹ However, the Federal Supreme Court decided in 1886 against the constitutionality of a State statute which levies a tax upon the gross receipts of railroads for the carriage of freights and passengers into, out of or through the State, as being a tax upon commerce between the States.²

A general State tax laid alike on all property is constitutional, even if it happens to fall on goods intended for export. Coal mined in Pennsylvania and shipped to Louisiana becomes intermingled with Louisiana property and liable to taxation there, though not landed, but intended for export.³

On the other hand imported goods while still in their original packages are exempt from taxation, a welcome provision to all importing merchants in New York, whose personal property appears in consequence on the assessment list as amounting to an insignificant sum. Similarly a tax on auction sales is void when applied to the sale of imported goods in the original packages.⁴

¹Reading Railway Co. vs. Penna., 15 Wallace, 284 (1872).

²Fargo vs. Mich., 121 U. S., 230; Cf. Phila. & Southern S. S. Co. vs. Penna., 122 U. S., 328.

³Brown vs. Houston, 114 U. S., 622 (1885).

⁴Cook vs. Penna., 97 U. S., 566 (1878).

A steamship company incorporated under New York State laws engaging in foreign trade is not exempt from taxation on its capital, because the amount is invested in steamships engaged in foreign commerce.¹

Aside from the constitutional questions involved, the question of the *situs* of personal property has led to legal complications.²

The personal property of non-residents is exempt when actually situated in another State or country, and taxable when situated within the State. This only applies to property which is capable of having an actual *situs*. Debts and choses in action in general follow the domicile of their owner. Lands and chattels have an actual *situs*. The legal fiction "*mobilia personam sequuntur*" is not of universal application.³ Goods and chattels within a State are equally taxable, whether owned by a citizen of the State or a citizen of another State, even though the latter is taxed in his own State for the value of the same goods as part of his personal estate.⁴

In general personal property is assessed in the township or ward in which the taxpayer resides on the day of assessment.⁵ Residence of a person in a town during June, July and August gives the town assessors jurisdiction over his person and property

¹People, *ex rel.* U. S. & Brazil S. S. Co. *vs.* Commissioners of Taxes N. Y., 48 Barbour, 157 (1866). Cf. in general People, *ex rel.* Haneman *vs.* Tax Commissioners, 10 Hun., 255; 73 N. Y., 607 (1878).

²Report on Local Taxation, N. Y., 1871, pp. 38-52, 64ff.

³Hoyt *vs.* Commissioners of Taxes, 23 N. Y., 224 (1861).

⁴Coe *vs.* Errol, 116 U. S., 517 (1886).

⁵Davies, *Taxation*, pp. 112-113; *Laws N. Y.*, 1850, ch. 92, p. 142; 1851, ch. 176; Bartlett *vs.* Mayor, etc. of N. Y., 5 Sandf., 44 (1851); Douglass' *vs.* Mayor, etc. of N. Y., 2 Duer, 110 (1853); Kirtland *vs.* Hotchkiss, 100 U. S., 491 (1879).

for the purpose of completing an assessment of his property. A change of residence after July 1st does not affect the assessment roll.¹

It is often difficult to determine the place of legal residence of a taxpayer, especially in the case of New York City, many of whose inhabitants claim a legal residence, perhaps only a summer home, in some neighboring county or in the State of New Jersey. A simple affidavit exempts such persons from taxation on their personal estate in New York City. In their country residences they pay only small taxes or are discreetly left unmolested by the county and township officials for fear of losing a valuable patron of the district.

Debts due inhabitants of the State from non-residents are taxable "however secured and wherever securities are held."² But this clause is practically nullified by the provision that if such debts are capable of an actual *situs* without the State they are exempt from taxation.

Debts owing by residents of the State to foreigners for the purchase of real estate are taxable as personal estate.³ Other debts owing by the taxpayer are deducted from his personal estate assessment and remain untaxed.⁴

The personal property of non-residents is taxable in so far as it is invested in the State.⁵ The agencies of non-resident corporations, such as banks, insur-

¹Boyd vs. Gray, 34 Howard Practice. 323.

²Davies, *Taxation*, pp. 64-5; *Laws N. Y.*, 1883, ch. 392, p. 568.

³*Laws N. Y.*, 1851, ch. 371, p. 721.

⁴*Laws N. Y.*, 1851, ch. 176; 1884, ch. 57; 1885, ch. 201, p. 364.

⁵*Laws N. Y.*, 1855, ch. 37, p. 44; *Internat. Life Ass. Soc. vs. Commissioners of Taxes*, 28 Barb., 318 (1858); *Duer vs. Small*, 4 Blatchf., 269; 17 Howard Pr., 201 (1859).

ance companies and factories, are directly affected by this provision.¹ However the interpretations of the law have been lenient. The goods of a non-resident owner sent to this State for the purpose of sale without reinvestment of the proceeds are not liable to taxation. The law intends to reach non-residents, employed within the State in a continuous business, and not property sent here only as to a market for sale.² Foreign capital sent to New York for investment is exempt, whether invested or uninvested, and whether the securities received therefor are taken away or remain in the State for collection.³ Where a foreign bank transmits its surplus to its agency, permanently established in New York City, for temporary loans, these funds are exempt.⁴

To prevent so-called double taxation, an individual stockholder in a corporation, liable to taxation on its capital, is not assessed for the value of such stock.⁵

One more general provision must be cited, which bears directly on the assessment of personal property. By act of Congress, February 25th, 1862, all United States stocks are exempt from State and local taxation.⁶ However, stockholders in a bank may be

¹People, ex rel. Bay State, etc. Co. vs. McLean, 80 N. Y., 254 (1880).

²People, ex rel., The Parker Mills vs. Commissioners of Taxes, 23 N. Y., 242 (1861).

³Williams vs. Board of Supervisors, 78 N. Y., 561 (1879).

⁴People, ex rel., Bank of Montreal vs. Commissioners of Taxes, 59 N. Y., 40 (1874); Cf. Hoyt vs. Commissioners of Taxes, 23 N. Y., 224 (1861); People vs. Trustees of Village of Ogdensburgh, 48 N. Y., 390.

⁵People, ex rel., Lincoln vs. Town of Barton, 44 Barb., 148 (1865).

⁶Davies, *Taxation*, pp. 76-78; People, ex rel., Lincoln vs. Barton, 44 Barb., 148 (1865); People, ex rel., Bank of Commonwealth vs. Commissioners of Taxes of N. Y., 2 Black, 620; Bank vs. Supervisors, 7 Wall., 26 (1863); Bank vs. Mayor, 7 Wall, 16 (1863).

taxed for the value of their stock, although the whole stock is invested in United States bonds and securities.¹

THE PRESENT TAX QUESTION.

In view of the legal complications in State and local taxation, which have been imperfectly sketched above, and in view of the practical difficulty of reaching the great mass of personal property, it is now generally acknowledged that *uniform* taxation of *all* property is an utter impossibility. As we have seen, real estate has always born the brunt of the property tax, and it has been proposed by those New Yorkers best acquainted with the subject, to give up the taxation of personal property,² which, as it now stands, is a mere farce and calculated to put a premium on dishonesty. The decrease in revenue due to such a change might be offset by increasing the tax on real estate, by extending the system of corporation taxes, or by introducing some form of personal taxation. Each of these measures has its advocates.

It is granted on all sides, that a reform of the present State and local tax system is necessary, but all are not agreed on the method of accomplishing this end. Any tax reform is so immensely complicated now-a-days by economic conditions. It is no longer simply a question of public finance. Just as the tariff has long ago ceased to be treated as a fiscal question, but as a question of industrial legislation, so state or local taxes no longer involve purely fiscal

¹ *People vs. Commissioners of Taxes*, 23 N. Y., 426 (1866).

² *Report on Local Taxation*, N. Y., 1871, pp. 52-59, 71-74; *Message of Abram S. Hewitt, Mayor, to Board of Aldermen*, Jan. 1888, pp. 37-38.

measures, but are fast assuming the character of industrial laws. The history of corporation taxation is an excellent illustration of this—the lenient treatment of manufacturing corporations and their exemption from the direct State corporation tax. The Erie canal which had long been made a source of revenue, was made free by a vote of the people on November 7th, 1882. A similar fate, no doubt, awaits the Brooklyn bridge.

As the tax laws now read¹—

“The real estate of individuals and corporations and the personal estate of individuals contribute to local taxation, and to the quota of State tax, but the personal estate and capital stock of corporations, contribute only to local taxes. . . . Individuals and corporations, including those liable to direct State taxation, pay taxes on real estate. Individuals and corporations not so liable, pay on personal estate by a rate that includes the State tax, while corporations so liable, and assessed upon the same roll, pay taxes on their capital stock and personal property according to the same rate, diminished by the rate of State taxation.”

Practically, all real estate is taxed, though very unequally. Of personal estate, the greater part escapes taxation, while the property of minors and other property which is in the hands of trustees, and cannot therefore escape notice, is heavily taxed.

The results we have reached, can be summed up as follows :

I. A general property tax, aiming at the taxation of the individual in proportion to his aggregate property, cannot be carried out with any degree of justice in New York. In Colonial times, when property was largely visible and tangible, such a tax may have been just as well as expedient, but in the present century it cannot be consistently maintained.

¹Davies, *Taxation*, p. 8.

II. Even if it were possible to assess all property at approximately its market value, it is not in accordance with just principles of taxation, to allow a tax which measures the individual's ability to pay taxes by the extent of his property, to gain the proportions which this system has gained in New York. The property tax in all the States and Territories, yielded in 1880, \$302,200,694,¹ a sum nearly equal to that derived by the Federal government from indirect taxes during the same year.

As an argument in favor of the present direct tax system, it is maintained that the property tax is a proper offset to the Federal taxes which fall particularly on the poorer classes. This argument however fails to establish the justice of the property tax in its present proportions in view of the changing tariff policy of the Union, and in view of the fact that the upper classes, as distinguished from the poorer classes, who bear the brunt of federal taxation, by no means correspond with the property tax-payers.

At the foundation of the property tax lies the principle contained in the "Social Dividend Theory of Taxation," as President Walker calls the doctrine "that the members of the community ought to contribute to the public support in proportion to the benefits they derive from the protection of the State."²

Such a give-and-take principle ("Leistung und Gegenleistung") is recognized in the first constitution of Massachusetts and in the Vermont constitution now in force, which provides (chap. I, art. 9) "that every member of society hath a right to be protected in the enjoyment of life, liberty and property, and there-

¹Compendium U. S. Census 1880, Part II, p. 1509.

²Walker, *Political Economy*, p. 440, §421.

fore is bound to contribute his proportion towards the expense of that protection” This principle has also been accepted by the courts:¹ “The person upon whom the demand is made, or whose property is taken, owes to the State a duty to do what shall be his just proportion towards the support of government, and the State is supposed to make adequate and *full compensation*, in the protection which it gives to his life, liberty and property, and in the increase to the value of his possessions, by the use to which the money contributed is applied.” This doctrine quite agrees with the popular notion in New York City, that one of the chief objects of municipal government should be to insure the rise in the value of real estate. We are told that “a property tax for the general purposes of the government, either of the State at large or of a county, city or other district, is regarded as a just and equitable tax. The reason is obvious. It apportions the burthen according to the benefit, more nearly than any other inflexible rule of general taxation.”² And again that “there is nothing poetical about tax laws. Whenever they find property they claim a contribution for its protection, without any special respect to the owner or his occupation.”³

Judge Dillon says:⁴ “Theoretically, the taxpayer is compensated for the taxes he pays, in the protection afforded to him and his property by the government which imposes the tax.” The State’s sole duty is the protection of property. Granted this premise

¹Cooley, *Taxation*, pp. 2, 20, 24.

²The People, ex rel., Griffen vs. The Mayor, etc. of Brooklyn, 4 N. Y., 428 (1851).

³Findley vs. The City of Phila. 32 Penna., 381.

⁴Dillon, *Municipal Corporations*, II, §736, p. 728.

is true, the conclusion is then quite correct. An individual must contribute to the State's support in proportion to the property in his possession.

The Economists have outgrown this position which the law so stoutly maintains. To quote from John Stuart Mill alone¹—

"There is in this adjustment (the *quid pro quo* principle) a false air of nice adaptation, very acceptable to some minds. But in the first place, it is not admissible that the protection of persons (for which service a pole tax is consistently proposed) and that of property, are the sole purposes of government. The ends of government are as comprehensive as those of the social union. They consist of all the good, and all the immunity from evil, which the existence of government can be made either directly or indirectly to bestow. In the second place, the practice of setting definite values on things essentially indefinite, and making them a ground of practical conclusions, is peculiarly fertile in false views of social questions. . . . Whether the labour and expense of the protection, or the feelings of the protected person, or any other definite thing be made the standard, there is no such proportion as the one supposed, nor any other definable proportion. . . . If there were any justice, therefore, in the theory of justice now under consideration, those who are least capable of helping or defending themselves, being those to whom the protection of government is the most indispensable, ought to pay the greatest share of its price."²

The sentence in the opening paragraph of Judge Cooley's treatise on Taxation, is an indirect admission of the insufficiency of this give-and-take theory of taxation: "The justification of the demand is therefore found in the reciprocal duties of protection and support, between the State and those who are subject to its authority, and the exclusive sovereignty and

¹Mill, *Political Economy*, II, Book V, ch. II, §2, pp. 393-4.

²Cf. similar lines of reasoning in Leroy-Beaulieu, *Traité de la Science des Finances* I, pp. 113 ss. Livre II, ch. I; Rogers, *Economic Interpr. History*, p. 117; Walker, *Political Economy*, p. 440, §464; Cohn, *Finanzwissenschaft*, Buch 2, Kap. 1, §192, ss. 234 ss.; Wagner, *Finanzwissenschaft*, II, §§329 ss. S., 150 ss.

jurisdiction of the State over all persons and property within its limits for government purposes."

The New York property tax is essentially objective; that is, it is directed at the property as distinct from the possessor. *Property* and its relation to the Commonwealth are emphasized, the tax-paying citizen is left out of account. Property, not the citizen, is taxed. This may seem a sophistical distinction. But the fundamental error in the theory of the general property tax is this personification of property. As long as the citizen, his relation and duties to the Commonwealth are overlooked in our tax system, we can expect no advance in our present primitive methods.

The property tax will probably always play an important part in municipal and county finances. The peculiar relation of real estate to local government will tend to cause its taxation to be retained as in England.¹ "In local taxation . . . the local benefits may in many cases be seen, traced and estimated to a reasonable certainty."² This principle is at the foundation of so-called local assessments³ for building streets, bridges and sewers, the supply of water, etc.

The experience of two centuries shows that an extension of the property tax is undesirable and inexpedient.⁴ On whatever lines State and local

¹Gneist, *Englische Kommunalverfassung*, 1863, S. 69 ss.; Bödiker, *Kommunal-Besteuerung in England and Wales*, 1873; Probyn, *Local Government in the United Kingdom*, 1882.

²The People vs. Mayor, etc. of Brooklyn, 4 N. Y., 428.

³Cooley, *Taxation*, pp. 606-77.

⁴Cf. Wells, *Reform of Local Taxation*, 1876, Ely, *Taxation in American States and Cities*, pp. 237, ss; Seligman, *The General Property Tax*, pp. 56, ss.

taxation are to be extended, a new direction for their development must be discovered.

If the personal property tax is given up, which seems inevitable, the arguments against an extension of real estate taxation are the same as those urged against the Henry George single-tax system, while an extension of corporation taxation means an extension of our present impersonal tax system. The introduction of some form of subjective, that is, of personal tax, seems to us advisable, which would be directed at the citizen as an individual taxpayer, not at his property. By building up a tax system on such a foundation the taxpayer would be awakened to a sense of his civic duties which lies dormant under the present system.

The Federal Government can accomplish nothing by direct legislative interference. None of the existing Federal taxes can furnish a foundation for State and local taxes as is the case in Germany and France. The constitutional development of the United States has tended to separate Federal from State and local taxation. The distribution of the surplus revenue of 1837, the greatest attempt to connect their systems of finance, proved a dismal failure.¹

¹Bourne, *History Surplus Revenue of 1837*, N. Y., 1885.

V.

RÉSUMÉ.

We have completed the review of the development of the New York property tax from the early Colonial days to the present day.

In this development we sought to emphasize the following facts:

The economic condition of the Colony during the Dutch rule did not favor the introduction of a direct tax on possessions, hence the prevalence of indirect taxes during that period. As soon as property became fixed and centred about the possession of land, a general property tax was introduced, modelled after the tax in force in New England. The uniform development of the tax was conditioned:

I. By the traditions of England, where a direct tax on property has been in vogue since the Norman Conquest.

II. By the economic condition of the Colony. As long as the inhabitants were mostly owners of real estate it was comparatively easy to assess their property, personal as well as real, and the equal taxation of all property was an easy and just method.

III. By the political development of the State. Freeholders occupied a peculiar position for a long time, and, in virtue of this position, the class of freeholders was coextensive with the class of taxpayers.

IV. By the relation of the Union to the States, the Federal Government on the one hand indirectly compelling the States to develop the property tax to its fullest extent, and on the other hand making the raising of that tax more and more difficult by reason of the interpretation of the Constitution by the Federal courts.

We pointed out the difficulties in the way of consistently carrying out the tax laws, which are centred about the difficulty of an equal and just assessment of all property. The frequent attempts to make the assessments more effectual, either by manipulating the assessor's oath, or by establishing fixed values at which various kinds of property were to be assessed, or by interference on the part of State officials, have all in turn failed to accomplish anything. The assessors will not, or cannot, assess real estate at its market value. The distribution of State taxes among the counties, and of county taxes among the townships, tends to aggravate this evil. Personal estate largely escapes taxation either on account of its mobile character or owing to legal complications.

Experience certainly teaches the necessity of a fundamental reform in State and local taxation. The property tax alone can hardly supply the growing needs of the counties and townships,—no material increase is to be expected in State expenditures. Some radical change in our local tax system is imperative. At present there is little indication of a coming reform. Aside from the recommendation to abolish the tax on personal property, the public at large seems quite well satisfied with the present antiquated system. As was the case in Europe, the increase in the fiscal needs of our cities and counties

will bring direct pressure to bear on the taxpayer and will induce him to examine the subject and convince himself of the necessity of reform. The increase of publications on taxation and public finance during the last few years is a sign of the awakening of interest in the subject.

A comparison of the systems of national and local taxation in the European States with the systems in the United States is of little value on account of the different constitutional arrangements in these countries. A comparison of the proportion of direct to indirect taxes paid by inhabitants of various countries is as follows :¹

	Direct Taxes.	Indirect Taxes.
France.....	22.70%	77.30%
Great Britain.....	40.16	59.84
United States.....	49.31	50.67
Prussia.....	50.63	49.37
Canton Zurich.....	75.84	24.16

It is evident that the United States and Prussia are most nearly alike in the proportion direct taxes bear to indirect taxes, while Switzerland and the United States have in general similar tax systems, namely, federal indirect and local direct taxes.

In the decentralized system of public finance in the United States there is no form of federal or State tax which could furnish a foundation for the taxes of the subordinate corporations. The entire direct tax system centres in the townships and cities,²

¹G. Cohn, *Steuerreform im Kanton Zürich und Bundeshaushalt d. Schweiz*, 1883, s. 63, based on Gerstfeldt, *Jahrb. f. Nat. Oek. und Statist.* N. F., Bd. 7, s. 40. Jena 1883; Spofford *American Alm. for* 1889, pp. 65, 203 (for 1880).

²Village and town assessments (Cf. Act Dec. 7, 1847) were to be distinct, but on similar lines. The village trustees act as assessors, but their powers are limited (Cf. *Laws N. Y.*, 1870, ch. 291; 1871, ch. 176; 1876, ch. 317; 1885, ch. 192). There is a decided tendency to rob them of the little fiscal independence they possess, and remove the distinction between town and village assessments, by putting both in the hands of the town assessors. (Cf. *Laws N. Y.*, 1885, ch. 69, p. 132.)

and whatever pressure has been brought to bear on the subordinate corporations by the State government has not tended to improve the tax system, but rather to intensify its worst features. With good reason the towns and cities, especially New York City, strenuously object to the State's interference with their finances, for so far little good and much harm has resulted from it.

An inhabitant of the following counties of the State of New York paid on an average in 1886 a property tax for town, county and State purposes as follows:

	County Tax.	Town Tax.	State Tax.
New York.....	\$ 20.60	....	\$ 1.45
Albany.....	2.30	\$ 5.10	1.40
Kings.....	2.05	12.10	1.35
Erie.....	2.30	.20	1.45
Westchester.....	2.15	2.10	1.85
Queens.....	1.60	1.80	1.20
Ontario.....	1.20	1.30	1.35
Oneida.....	1.85	1.00	1.30
Sullivan.....	1.40	2.00	.50
Putnam.....	1.40	.75	1.35
Cortland.....	1.45	1.80	1.15
Orange.....	1.35	1.50	.65
Monroe.....	1.55	.65	1.45

During the same year \$9,089,304 were raised by the property tax for State purposes, and \$51 550,503 for local purposes. In the townships and particularly

in the large cities, the heavy pressure of the tax will first be felt, and the question of a tax reform will first be discussed. An inhabitant of New York City will first look into the character of the municipal property tax, which annually demands \$20.60 of him before he questions the justice of the State tax (\$1.45).

The conflict of city and country interests in tax matters suggests the propriety of separating municipal from the finances of the country districts. Everything points to a decentralization of our system in that direction. By such a move the initiative of reform is laid in that body politic, where the citizen is most directly made conscious of his position in the Commonwealth, and where for that reason some form of personal taxation would be particularly desirable. Such a move would also correspond with the development of taxes in European countries. It is to be hoped that what it cost England centuries to accomplish may be reached in this country in a generation or two.



The Educational Value
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**The Educational Value
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BY

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**PROFESSOR OF POLITICAL ECONOMY IN THE WHARTON SCHOOL OF
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1

The Educational Value of Political Economy.

BY SIMON N. PATTEN, PH. D.,

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Economy, University of Pennsylvania.

Until quite recently, the subject of educational values received little attention. It was thought that the discipline of the mind should be the chief aim of college life, and that this end was attained by studies that were separated by a wide gulf from the interests and pleasures of the world, out of which the student withdrew when his college life began. This discipline and exclusion from worldly influences were best promoted by a study of the ancient languages and mathematics and hence they acquired a dominant place in college work.

With the growth and success of the modern sciences a new and broader ideal of education has gradually won the favor of thinking men and caused a revolution in our ideas of educational values. We now send a boy to college to fit him for the world, and not, as formerly, to exclude him from it. The disciplinary value of a study receives less attention than formerly, while the pleasure a student gets from his work is thought to be a good indication of its value to him as a means of mental development. Just as the taste of food indicates its fitness for

food, so does the pleasure in studying a subject show the educational value of studying it.

As a result of these changes a serious conflict has arisen between the old studies and the new, through which the former are being gradually displaced by the latter. Mathematics alone of the old studies holds an unquestioned place in the college curriculum. It is regarded as a model science and as setting the standard to which all sciences must conform and by which their progress must be measured.

All this, and much more, could be said of mathematics without exaggeration, yet are these the facts upon which the educational value of a subject depends? Is the utility of a science to the world at large to be accepted as the standard by which to measure its worth to a student, who wants not mathematics or any other one science, but mental culture and intellectual development.¹

I would answer this question in the negative and shall try to show that the same tendencies that in college courses are displacing the old languages, will also displace the old and complete sciences by the new and less complete ones.

In the beginning all the sciences are inductive, but gradually, through the collection and generalization of facts and the increase of our knowledge, they change into a deductive form. It is not, however, in its inductive or deductive stage that a science has its greatest educational value. It is in the transition from one stage to the other. The transition is grad-

¹In the *Educational Review* for February, 1891, the writer has an article on "The Educational Value of College Studies," in which the relation of the utility of the various studies to their culture value is fully discussed. It also emphasizes the educational value of the moral sciences.

ual, and often single portions of a science become deductive a long time before the others. When certain parts have become deductive, the character of the laws and the method of reasoning best fitted to the science, can be seen, while the other parts, yet inductive, furnish that incentive for earnest study through which they can be changed into a deductive form.

When, however, a science becomes completely deductive the various parts are subordinated to the whole. All data are cut out from the study that are not essential to the apprehension of the whole. Its parts are thus closely joined together, and form a compact body of doctrines. This process adds greatly to its utility, but detracts from its educational value. Mathematics is the best illustration of a science in its complete form, and the systematic presentation of it in our text-books makes it very useful as a preparatory study for other sciences, but gives it little value on its own account.

Physics is another illustration of a science that has now passed into this complete stage in its development where its utility is great, but its educational value is small. At an earlier period, physics was used as an illustration of what a model science should be, and Mill in particular made use of it in this way and contrasted it sharply with mathematics. What Mill said of it was doubtless true in his day, but since then physics has changed into as abstract a science as mathematics, and, consequently, it no longer possesses those marked characteristics which led Mill to esteem it so highly.

It is therefore necessary to seek new sciences to take the place of the completely deductive sciences

which must now be regarded rather as utility than as culture studies, and it is a part of my plan at the present time to show what advantages economics has as a substitute for mathematics and physics in a course of study designed to develop the reasoning powers of the student.

In the present stage of its development it has special claims to be regarded as of great educational value and is, in many respects, a model science for the purpose of teaching.

The different parts are in different stages of development, and therefore all kinds of judgments, deductive and inductive, are made, and facts of every description needing investigation are to be found in abundance. The theory of distribution is highly deductive and furnishes the best examples in pure reasoning from hypothetical premises. Exchange also is largely deductive, though its reasoning is not so complete as that of distribution. In production on the contrary, induction predominates, yet we have some deductive parts which come in to influence the conclusions which a student can justly draw from his premises and facts. In consumption but little work has been done, while many practical problems lie wholly in the domain of induction.

It is also of advantage that it can be studied by problems, where each part will receive that emphasis which its educational value demands. If a given problem has special interest to a student there is no reason why he should not devote particular attention to it, nor will he lose anything in the science as a whole by so doing.

The theory of political economy is especially fitted to become a substitute for mathematics and physics.

It trains the intellect as well as they do and gives that confidence in reasoning needed to properly handle complex subjects. It is also of advantage that the chains of reasoning are not as long and that the return to elementary principles is so frequent. Every fresh start gives an opportunity for new deductions, to test the power of the student, to see the old truths under new forms, and to verify his conclusions by the facts of every-day life.

It is also worthy of mention that political economy trains a student in reasoning similar to that which he has to do in every-day life. All those judgments which everyone must continually use in practical affairs are exactly of that kind and character that we find in political economy, and if the student has had the advantage of a thorough training in economic reasoning, he will be much better prepared for active life than if he were drilled in the dogmatic reasoning from simple premises such as one finds in mathematics or physics. It has the further advantage that all its premises are subjects of discussion and doubt, and hence are more likely to arouse the interest, or perhaps the opposition, of the student, and this makes him more careful of his tests. Unquestioned truths have little educational value. A study of premises is of far greater importance than a study of the form of reasoning through which conclusions are drawn from given premises. As the premises do not conform exactly to the conditions of the concrete world, they give much more room for examination and discussion than is true of the axioms of geometry or the groundwork of physics.

Economic theory is of special value as a means of developing the reasoning powers of the student,

through the frequent use which is made of hypothesis in order to find the causes that are at work in complex cases. Whenever the hypothetical method is used, the various subordinate facts are dropped out of sight, and certain leading principles are joined closely together and held firmly in mind in a way that leads to clear thinking. It thus requires a great degree of mental power to trace clearly the conclusions which can be drawn from a given hypothesis, keep them separate from actual conditions, and, yet, in no way confuse one with the other. The difficulty in doing this is greatly increased when the hypothesis in many respects differs from the actual facts, and under these circumstances the student must cultivate a great power of holding definitely to the working of certain laws, or he will fail to get the culture he should from the use of the method.

The science also cultivates the imagination of the student and leads him to form mental pictures of society, similar to what a geometrician has of the forms of a figure. Each economist has in mind a concept of the economic world he is describing, just as a student of geometry has in mind abstract forms of the concrete bodies about him. To form a clear concept of economic relations is a hard task, but it is excellent discipline, and gives an economist a much better grasp upon general principles than he could obtain in any other way. He must first obtain a clear idea of the working of each economic premise, and then bind them all together in a way that will show their relations to one another, and the combined effect of all of them upon society. The concept is thus a skeleton, so to speak, of the actual society of which the economist forms a part, and not an ideal of the

best possible society he could devise.¹ In the writings of Ricardo, we find this power developed to a remarkable degree. His ability to overlook the subordinate and discordant facts of society which do not bear upon the general problems, seems fully as great as that of a geometrician who sees the figures of geometry, without ever thinking about the concrete forms in which the figures are found in actual life. Ricardo seems to have thought no more about the differences of the actual man in society from the economic man that he had in mind, than the geometrician thinks about the actual lines in solids not being the straight lines which he uses in his figures.

All economic thinkers, to a greater or less degree, form concepts in their own minds by the aid of the general principles which they have obtained from their studies. Each one has a definite concept which does not conform to the actual society in which he exists. He is, perhaps, unconscious of the fact that he has in part created the economic world, which he has in mind, yet nevertheless if he is a successful economist, he has done so to some degree, and the more successful he has been, the greater the probability is

¹I wish to contrast "concept" with "ideal" so as to bring out the distinction between them. In one the premises and laws are those actually operating in the present economic world united in a whole for the purpose of explaining the visible phenomena. In the other new premises are included, and others are modified so as to make a combination that will give a society as free as possible from evil and suffering.

I think the formation of proper ideals is a necessary part of the work of the teacher. The formation of concepts, however, is, more elementary and should come first. With the material which the study of concepts gives ideals can be formed that will be a source of inspiration, yet without that narrowness and bigotry which comes from having a crude ideal, created by an unconscious process, out of a few characteristics of our economic world.

that his concept deviates largely from the actual society in which he lives. This fact gives to the teacher one of the best means of cultivating the imagination of his pupils. In the study of each author he should endeavor to make them form a picture of the economic world which the author had in mind. It is very useful to contrast with one another the concepts of society which the Physiocrats, Adam Smith, Ricardo, Mill and other economists formed, and thus give to the student the power to form new concepts out of the materials he finds in the world about him.¹

The history of mathematics is of great value in showing what will be the line of progress in political economy. The power of thinking of geometrical figures apart from their material content was gradually developed. First of all, men learned to think of lines separate from material bodies; they then became able to isolate planes and think of them as abstract concepts; and lastly, they acquired the power and ability to think of geometrical solids. Ricardo was the one who did for economics what Plato did for plane geometry. He selected the outlines of a physical economy, and separated them from the concrete phenomena of society of which they form a part. His success lies in his power to completely isolate each problem from a complex whole, just as a

¹In his essay on Ricardo and Malthus (Vol. iv No. 5 of this series of Publications), the writer has endeavored to show how different were the economic worlds which these men had in mind. Although they lived at the same time, each one formed his concept of English society from those characteristics of it which were most impressed upon him by his individual environment. Their writings thus form a good illustration of the way economists get the world of which they write.

mathematician separates each single plane from the material solid of which it is a part. This was a great progress over the earlier concrete methods, and in teaching the student to isolate economic problems and to separate the form from the content, he gains a mental power similar to that given by plane geometry.

Yet, after all, the system of Ricardo was but plane economics. So long as economics is treated in this way there are two kinds of economics opposed to one another. On the one hand there is an objective economics based upon the physical facts of the objective world and the natural laws which regulate them. On the other hand the new school of economists, led by Jevons and Menger, has established a subjective economics, based upon the psychological changes in man and the subjective estimates which man places upon material commodities. The Ricardian economics was objective, because it supposed an unchanging man under different objective physical conditions. A subjective economics, however, supposes a changing, progressive man, under fixed physical conditions. In the studies relating to man we find the basis for such a subjective economy, just as in the studies of the physical world we find the basis of an objective economy.

There is no way to harmonize these two points of view in an economics of two dimensions. The development of this new school will therefore lead to the rise of a solid economics, where the problems of a changing man can be treated in connection with changes in the physical world in which the man lives and through which he is conditioned. In this way deductive economics will become more real, and

thus more valuable, because changes in the environment are accompanied by changes in society and in men. This kind of economics will be much more difficult than was the plane economics of Ricardo, and it will increase proportionately the culture and mental power of the successful student. Just as passing from plane to solid geometry helps the development of the student's mind, because of its increased difficulties; so will the new economics be of proportionately greater value to the student than that which is represented by Ricardo.

The discussions relating to the tariff afford a very apt illustration of the need of a change from plane to solid economics. The stronghold of the protectionist lies in the effects which protection has upon man and society. Through it a better class of men may survive, and society becomes more useful to the individuals that compose it. With protection nature may do less for man, but if man becomes more intelligent and efficient, the gross return may be increased in spite of the less use he has made of natural forces.

The advantages of free trade, however, are best shown by emphasizing the effects of the physical world on the production of wealth. A free-trader always keeps before him the conditions of the environment which determine the production of wealth, and seeks to establish his case by showing that his system utilizes the physical forces more fully than a protective policy can do.

The two opposing parties are looking at different faces of the same solid, and forget that its contents cannot be determined from the two dimensions which form any one face.

The second leading educational value of political economy lies in its history. The science is so modern that the origin of each doctrine and its gradual development can be easily traced. It is easy also to show that all institutions and policies are based upon peculiar economic conditions which must change with the gradual development of economic facts. All institutions are means of progress in the start, but at length, through social progress, become barriers to further progress and must be discarded. We hardly cease the struggle for the introduction of an institution before we begin a new struggle to get rid of it. Any society that is in a dynamic condition is constantly forming new institutions and developing new conditions in society which bring about a conflict between society and the institutions to which it was fitted in the past.

The caste system, and even slavery itself, when viewed from the historical point of view, seem as much a necessity to the ancient world as they have been a curse to the modern. At first they were means of progress and helped in the development of the nations that introduced and made a proper use of them, but they at length ceased to be means of progress, and finally stopped all further development of those nations which held to them. In the more modern times the same facts show themselves. Feudalism and the guilds were in their proper time means of improving society and helping along its progress, yet through the advance in society which they caused, they became unfitted to society, and thus needed to be displaced by new institutions, more in harmony with modern civilization.

The mercantile school, as well as that of the physiocrats, were essential parts of the economic system by which the modern industrial world took its rise. They became in time unsuited to the industrial system of more recent years, and had to be displaced by another system that grew up out of the increasing demand for greater freedom in commerce and industry. The school of Adam Smith, which followed them, while well fitted to help along the industrial progress of the world for a time, seems like the systems it displaced, to have had its day and its utility, and is now likely to be displaced by some new system, not yet fully developed, more in harmony with the conditions of the present and of the immediate future. It will be as powerless to survive the great radical changes in our economic environment now going on, as any of the past systems were to survive the conditions to which they were fitted. The old cannot return. The present cannot remain. The history of economics thus helps us to understand and appreciate the policies of other nations who adopt a different policy from our own, and to value rightly the motives of persons in our own nation, who think another economic policy than the one we advocate would be better for our time and nation.

When rightly studied it gives to the student a catholic feeling which it is not possible to obtain in any other way. The errors into which he is likely to fall from too great a use of the theory, is corrected by its study, and in this way theory and history are brought into harmony, and with a great increase in their educational value. It modifies our notions of individual rights and causes us to distrust the shallow kind of cosmopolitanism that had such a charm

to our fathers. It displaces the idea of absolute perpetual laws, and puts in its place conditioned laws depending upon orderly changes. It also shows the dependence of man upon nature, and at the same time man's power to modify his environment.

Political economy has a third leading source of educational value, in the study of facts. For such a purpose it has many advantages not within the reach of other sciences. There is no place where real laboratory work can be performed with better results than among economic facts. On all sides there is an immense wealth of material which may easily be collected and utilized. We have financial reports, municipal reports, and those on trade, commerce and navigation. Almost all State documents furnish to the student invaluable information as to economic facts and conditions. Our railroad and corporation and bank reports are also mines of great value, while the census gives to the student an immense collection of statistics, the importance of which cannot be overestimated.

From all these sources the verification of economic laws can be made, and the effects of new inventions and other economic changes can be traced. There are many new problems to investigate, the facts of which are little known, and any student, who cares to take the time and trouble to get at these sources of information, can add materially to our knowledge of economic laws and conditions, and greatly aid in the progress of the science.

Political economy thus joins in one body a group of characteristics that make it of great utility to the student. It cultivates both observation and reflection. It gives to him the discipline and logical train-

ing of mathematics, the culture of history and the inductive work of the physical sciences. It brings his imagination into activity and arouses his sympathy for those who suffer from the evils of society. It also creates an interest and enthusiasm for the study of social problems through which he is spurred on to seek a solution for the many perplexing difficulties that beset human progress.

In spite of all these possibilities the great educational value that lies in this study is often neutralized by the errors of teachers who do not understand how to put the various parts of the science in such a relation to one another that they will have an accumulative effect on the mind of the student. The culture a student obtains from his work depends as much upon the method of instruction as upon the content of the science taught. It is therefore proper to call attention to the leading errors of this kind to which teachers are liable, and in this connection I shall point out five of them.

TEACHING POLITICAL ECONOMY AS A COMPACT WHOLE, LIKE MATHEMATICS.

The same danger, however, lies before an instructor of economic theory, as in the case of mathematics and physics. The teacher is apt to present it as a connected body of truths and value the parts merely in their relation to the whole. He is apt to overlook all economic phenomena which do not fit nicely into the economic scheme which he has formed. In this way many economic facts and relations are neglected and other= entirely out of proportion to 1

This method of teaching leads to the subordination of each part to the whole system which the teacher wishes to inculcate. Some one doctrine or few doctrines receive constant attention, and all others are regarded as mere stepping-stones leading to those truths which the teacher desires to impress upon the pupil.

This is a great fault of the Ricardian economics, especially when the theoretical part is subordinated to the teaching of the doctrines of the Manchester school and creed of free trade. The whole body of doctrines that makes up what is called orthodoxy in political economy, when presented as a means of inculcating given ideas, cramps the mental development of the student, instead of aiding in his progress. Often it is to be feared that at the end of his course in economics, the student leaves college with the impression that the whole system of economics is of importance only in developing the ideas of free trade, and of State inactivity. This is a great error and one that should be avoided by every earnest teacher. To have an educational value, each doctrine should be examined by itself and tested to find the degree of probability that must be given to its proof. Each doctrine must be so thoroughly presented and receive such an emphasis, that the student can derive from it all the advantage it can impart. The graduate courses are the proper places in which to treat of the relation of doctrines to one another and of the whole as a unit. The student has now acquired the culture and mental power needed for such work, and can pursue it without that detriment which he would have received had he followed some rigid system from the start.

THE USE OF REDUCTIO AD ABSURDUM ARGUMENTS.

The error in using these arguments comes also from a too great influence of mathematics upon the reasoning of political economy. In mathematical reasoning the number of alternate possibilities is definitely known. When there are only four possible suppositions, and three of them are proved to be false, we can truly reason that the fourth is a true one. If we prove that an angle is neither acute nor obtuse, we can justly conclude that it is a right angle. But in political economy so great a rigidity in reasoning can never be secured. We are never sure of the number of suppositions which might explain the case in hand, and hence when we prove that all but one of them are untrue, it does not follow that the remaining supposition is correct. It often happens that we overlook some unknown factor, through which our reasoning is weakened.

The errors that arise from this form of reasoning are numerous, and show themselves in almost every part of political economy. Take, for example, the discussion of the silver question. I have recently seen an argument placed in this form: The general fall in price that has recently taken place must come from one of three sources: from a reduction in the cost of transportation, from a reduction in the cost of production, or from an increased value in gold. Then it was shown that neither the reduction in the cost of transportation nor in the cost of production would account for the fall in prices which has taken place, and as these two causes could not account for the changes in prices, the conclusion was drawn that there was a depreciation in the value of

The error lies in the fact that there may be other causes than these three that have, to some degree, helped to bring about this fall of prices, and the mere fact that so far only three possible causes have been enumerated does not make the conclusion legitimate that because two of them cannot account for the change in prices, the change has resulted from the third cause.

As a second illustration I would mention the argument of the Socialists, which is based upon the so-called iron law of wages. The reasoning of Ricardo, which goes to show that wages will always remain at a minimum, is very carefully followed by the Socialists; and having to their satisfaction established this law, they proceed to make a *reductio ad absurdum* argument, by claiming that, as wages tend to a minimum, competition is a failure as a regulator of prices. Consequently some other system of economics must be introduced through which competition will be entirely displaced by some other form of social organization.

In Henry George's *Progress and Poverty* there is a typical argument of this class. He wishes to draw the conclusion that we must make land common property, by showing that this is the only remedy for the social evils and poverty which afflict society. He finds that six other remedies for poverty have been proposed—

First—Greater economy in government.

Second—Better education of the working classes.

Third—Combinations of workingmen.

Fourth—Coöperation of labor and capital.

Fifth—Governmental interference.

Sixth—A more general distribution of land.

Each of these six proposed remedies he shows to be insufficient, and he then draws the conclusion that the only true remedy is to make land common property. He takes twenty-five pages to show the insufficiency of these remedies, but when he comes to his own it is stated in half a page. He gives no affirmative argument for his remedy. His sole reliance is on the insufficiency of the remedies which others have proposed.

Any such method of reasoning is radically incorrect in economics. We are so uncertain as to whether or not we have all the possibilities before us, that we cannot reason in this manner. Every proposition that is set up as a principle in economic discussion should have positive arguments as a basis. It should be grounded upon well known economic facts and not be in any way connected with the failures of other proposed remedies or upon the falseness of other doctrines. It is an indication of crude thinking when any one resorts to theory when positive facts are lacking. Deductive reasoning is too often looked upon as a means of bridging over a lack of facts. The use of deductive reasoning is justifiable not where the facts are known, but where they are best known. The purpose of deduction is to arrange and correlate these known facts in a way that will show the law upon which they depend: and all deductions are radically defective that are not confined to this field.

PUTTING THEORY AND FACT IN OPPOSITION.

Another common error in discussing economic subjects lies in the endeavor to disprove theories by arranging facts and history in a way that seems to

show the theories to be false. Theories, however, are not to be disproved in such a manner. A theory can be properly met only by a theory, and facts by facts. By this I mean that to show that a mass of facts do not correspond to the conclusions which may be drawn from a given theory, does not disprove the theory. It merely indicates that some other cause is working which prevents the effects of a given theory from being shown by all the facts. It must be kept in mind that in economics there are many conflicting causes in operation, and, as a result, the effects of one cause are often counteracted by the effects of other causes, and in this way a direct verification of certain theories is impossible.

A good illustration of this comes from the discussion of the law of population. Malthus has given us a theory based upon certain well known facts of human nature and the physical world. The opponents of Malthus do not seek to deny the facts upon which he based his theory. This would be a legitimate process, because, if the facts upon which the theory is based, should be disproved, then, of course, the theory would fall. Instead of proceeding in this way, they endeavor to show that the conclusions which can be legitimately drawn from the Malthusian theory are not true in the world about us. They show, or at least endeavor to show, that instead of the world being overpopulated, it is really underpopulated, and in many parts not populated at all. But even to admit the truth of all the facts they present does not disprove the Malthusian law. It merely shows the complexity of the causes which control the growth of population.

A second illustration can be found in Carey's discussion of the law of rent. He endeavors to show that instead of there being any surplus from land above the cost of labor and capital to go as rent, there is a real deficiency, the value of the produce not being equal to the return needed to replace the capital and labor expended in bringing the land into cultivation.

The theory of rent can only be disproved by facts that would disprove the premises upon which the theory rests. So long as there are differences in soils there will be rent, even if the whole value of the land of a country is less than the cost of bringing it into cultivation. The part of the whole produce of the country is rent that, in distribution, follows the law of rent, whether the source of the return from land is due to natural or acquired qualities. Carey recognizes the reality of rent as a factor in distribution by showing that the fall in rate of return from investments in land was more rapid than the fall in the rate of interest. To put, therefore, the facts showing the decrease of rent as a whole in opposition to the theory of rent, was a serious error on his part which only reacted against himself and kept the strength of his position from receiving due recognition.

The third illustration can be obtained from the theory of money. It is claimed that the quantity of money, since the discovery of America, has increased twelve-fold, and from this it is argued that the quantitative theory of money is false, because with a twelve-fold increase in the quantity of money there should be twelve-fold diminution in its value.

The fallacy of this reasoning is apparent; yet it is a typical argument of its class. The theory to be discredited is given a narrow interpretation and then some well-known fact is shown to contradict the conclusions which the premises seem to justify. This style of arguing is satisfactory to those who think their reasoning is wholly inductive, and that no conclusion is justifiable that does not harmonize with all the facts.

Another class of persons err in the opposite direction. They have acquired the mathematical instinct of overlooking the content of the objects they have in mind to study their form. They form simple theories in economics and apply them to society with little regard for the complex relations of modern industry. If their theories are said to be out of harmony with observed facts, they sweep aside the objections as invalid. Their confidence in theory is so great that facts always suffer when an opposition arises. That men in our world do not conform to their fictions is of as little concern to them as the actual lines of a solid are to a geometrician. Their science is one of hypothesis alone and without those tests of verification by which the theories in other sciences are measured.

In every economic discussion we find these two extremes of opinion. Both parties desire to make the issue appear to lie in a place where there is an apparent opposition between theory and facts, and then the one party brushes aside the facts as eagerly and as easily as the other does the theory.

A teacher, however, should exercise extreme care not to bring theory and fact in opposition, because in so doing he greatly decreases the educational value

of both. Theory is of great value in giving to the pupil a confidence in reasoning. (History, when properly taught, gives the student a liberal, catholic tone. The purpose of statistics, however, is to give to the student a love of facts.)

In elementary courses, therefore, these three things should be kept apart so as to allow each one to have its full effect in the development of the student. Emphasize the opposition between history and facts and theory, and you destroy the student's confidence in his reasoning, and thus retard his mental growth. Complicated problems where there seems to be such an opposition, should be reserved for graduate work, when the student has acquired such a confidence in his reasoning, and such a love for facts and history, that he can handle these problems without any detriment to his further progress.

BEGINNING WITH THE CONCRETE INSTEAD OF THE ABSTRACT.

In the study of any subject, it is the usual method to begin with the concrete. This course is justifiable where the phenomenon is so simple that valuable inductions can be made from the facts alone. In the study of our institutions, for example, the local governments are simpler in their organization than the general government, and hence, in beginning with the former, the teacher does what is right.

The opposite, however, is true of economics. The concrete facts are much more complicated than are the theories with which we explain them. The causes working in political economy so often interfere with one another, that the results of their com-

bined action are very deceptive unless the theory of the action of each one is first clearly understood. A good illustration of this is to be found in foreign trade. The fact that commerce is a barter of goods for goods is usually overlooked by those who engage in trade. In the international distribution of money, and in the action of Gresham's Law, the theory is very simple but the facts are complicated.

It is not possible to treat these subjects adequately without having first a firm grasp of the simple theories that lie beneath the surface. We cannot too much emphasize Ricardian clearness as opposed to the crude thinking which we find among the adherents of the mercantile school. The causes of the confused notions of the latter lay in their method of endeavoring to discover the laws of political economy by merely collecting the facts that bear upon it. The Ricardian method is the reverse of this, and his success comes from the definite and decisive way in which he arranges the many confused facts so as to show the simple laws upon which they are based. There was a lack of order in this class of facts before the time of Ricardo, and to him and his method is due the present advanced condition in which we find the discussion of these problems.

In the popular discussion of the tariff both protectionists and free traders are likely to make this mistake. They each try to show that their policy raises the value of food when they are talking to farmers, but when they are talking to other classes interested in cheap food, they seek to show that their policy lowers its value. From the multitude of complex and contradictory facts to be found on all sides each party selects those that confirm their views. There is no

relief from this confusion except through a resort to theory.

Before discussing the complicated facts of international trade, it should be determined whether a high or low value of food is desirable. The opposition between the value of food and raw material and the products of labor must be clearly seen before any valuable discussion upon the tariff can be had. Every clear thinker must decide whether he wishes the one or the other to have a greater value than it now has, and only after he has made such a decision is he in a state of mind that will allow him to consistently discuss the intricate problems that arise in connection with the tariff.¹

Another illustration is to be found in the discussion relating to the theory of value. Before the time of Menger and Jevons this whole subject was in a state of confusion. It was not possible to state the law of value in any simple form. Now, however, all this has been changed. The complicated phenomena of value and of the cost of production can be readily explained by a theory so simple that it seems difficult to see why it was not one of the first principles of political economy that was brought to light.

MIXING MORALS AND POLITICS WITH POLITICAL ECONOMY.

In calling it an error to mix the principles of morals and politics with economic discussions, I have no desire to underestimate the importance of either of them. There can be no full discussion of economic problems without bringing political and

¹See Chap. V of the writer's *Economic Basis of Protection*.

moral principles into relation with the economic. The question at issue is one of order and method. Logical discussion demands that the premises derived from different sources should be kept distinct, and that any principle that is really moral or political should be clearly recognized as such when it is brought into the realm of the economic world. When this precaution is neglected we usually find that some degenerated form of morality or politics is inserted into economic discussion, and in this way our conclusions are weakened and false doctrines keep their place in public opinion. A moral or political principle should be thoroughly discussed as a part of ethics or politics before it is introduced into economic discussion, and any principle that will not stand this test is not deserving of consideration in economics.

Take as an example the doctrine of Henry George. By his method we have confused together arguments that are economic with those that are political and moral. We find the Ricardian law of rent put in the foreground. This is clearly an economic doctrine. But from the law of rent alone we could not draw any such conclusions as Mr. George desires. Coupled with the law of rent we find the negative politics of Herbert Spencer and the morality of taking land without compensation. The politics of Mr. Spencer should of course receive due attention in the proper place, but it does not lead to clear thinking to have his ideas inserted in an economic discussion, as though they were really based upon economic principles. The morality of public seizure without compensation likewise is clearly not an economic problem. It belongs to the field of morals, and should

be discussed as an ethical question along with other propositions of a like character. No correct judgment of the rights and obligations of land owners is possible without a complete history of land tenure. When, therefore, these three separate points of view are thrown together and the whole presented as if it were purely an economic argument, we have a condition of thinking which produces undesirable results. It deceives the unwary and creates intolerance and dogmatism.

In the doctrine of free trade we have another combination of politics and morality with economic doctrine. The economic side of this argument lies in the doctrine of comparative cost. With this we have bound up the *laissez faire* conception of government and a degenerated form of Bentham's system of morality.* Even if Bentham's morality were presented in a pure form, it should stand alone—but a corrupt form of it demands especial attention. That self-interest as a basis of morality is a much broader and more general proposition than that the interest of individuals leads to the interest of the whole nation. Yet the position of the uncompromising free trader involves more than this. It assumes that the greed of individuals—a very different thing from the interest of individuals—leads to the general good.

It seems only just, therefore, that the free trade argument should be separated into these three distinct parts, and each one of them discussed by itself, in connection with its own proper topic. First, let us have what conclusions it is proper to draw from the doctrine of comparative cost; then, if the subject is not thoroughly settled, it is well to bring in other doctrines from morality and politics. But before so

doing it should be carefully examined, to see that the doctrines that are brought in to support this economic policy are really good morality and good politics.

In almost every discussion of economic problems this confusion of economic premises with the moral and political is apparent. I will state a few popular doctrines in which this fact is clearly seen.

The right of individuals to the fruit of their own labor looks like a purely economic proposition, yet, when examined more carefully it is really a political one. When we say property is sacred, labor should be free, land ought to become common property, taxation ought to be according to income or that the State should support the poor, other premises than can be obtained from strictly economic sources are needed to justify such conclusions. The claims that property is sacred and that property is robbery have the same economic facts as a basis, but different moralities.

After a given principle has been discarded in the science to which it properly belongs, it often holds its place in a related science, where it creeps in without proper examination. The popularity of economic reasoning causes moral and political arguments to be carried on under its name, because it appeals to a lower motive—that of self-interest. It therefore seems to many writers advisable to keep moral and political principles out of sight, because they do not have that weight with the average man that doctrines have which appeal to self-interest.

If we go back to Adam Smith, when political economy had its beginning, and examine into the political and moral creeds of the time, it will be clearly

seen how much of his system is due to the then prevalent ideas of government and morality. It was then generally accepted as the basis of politics that an unequal distribution of wealth and the consequent misery and vice were due to the oppression of government. It was also thought that all men were born with the same ability, and that there was that equality of condition among individuals which is needed to make absolute freedom of contract beneficial.

As a consequence of these theories, the doctrine of just prices which was handed down from the fathers, was discarded, and competition obtained full sway. In our day competition has been so generally accepted as the regulator of prices, that we can hardly understand the position of our ancestors who made so much of just prices in contrast to those resulting from unrestricted competition. In fact, the average man does not seem to see that there is any moral issue involved in buying as low and selling as high as he is able. Our inability to see the moral issue involved makes many problems seem economic that are plainly moral. The confused thinking due to this fact, leads many persons to desire to overthrow our present economic system, when in reality it is our moral ideas that need reconstruction. We need a new morality and a new politics even more than we need a new economic system. But before we can have any of these desired reforms, we must clearly recognize the distinction between them, and separate the present confused discussion about social affairs into three distinct parts, building up in each division a science that rests upon its own foundation. Each

science will doubtless need premises derived from the others. Any such premise, however, should be accepted consciously and be made a subject of criticism only in the science from which it is obtained, and in relation to other doctrines of which it is a part.

In closing I wish to say a word as to the need of a more complete separation of these sciences in the instruction given in our colleges. A large part of the present confusion in the thinking of our students, is due to the fact that two or more of these sciences are taught by the same professor. Each of these subjects needs a man with peculiar instincts and endowments to teach it in an efficient manner. When an instructor is compelled to teach more than the one for which he is by nature and education fitted, he usually subordinates the other sciences to his favorite, and thus fails to keep clear the lines that separate the one from the other.

Political economy suffers the most from such a combination, because political and moral instincts are older and stronger than the economic, and hence have a greater influence upon the instructor. The science is so young that it is hard to find individuals that are economists by nature. No one fact has hindered the development of economic theory more than the preconceived notions that its investigators have brought to it from other fields of thought, and from which they were incapable of freeing themselves, because these notions were a part of their second nature by inheritance.

This evil can be avoided only when each subject has its own instructor, and he is chosen solely because of his fitness for his especial work. When

this time comes, we can so shape the thinking of our students, that they will master the intricate problems of politics, solve our economic problems, and have the moral force needed to devote their lives to the working out of their ideals in the world about them.

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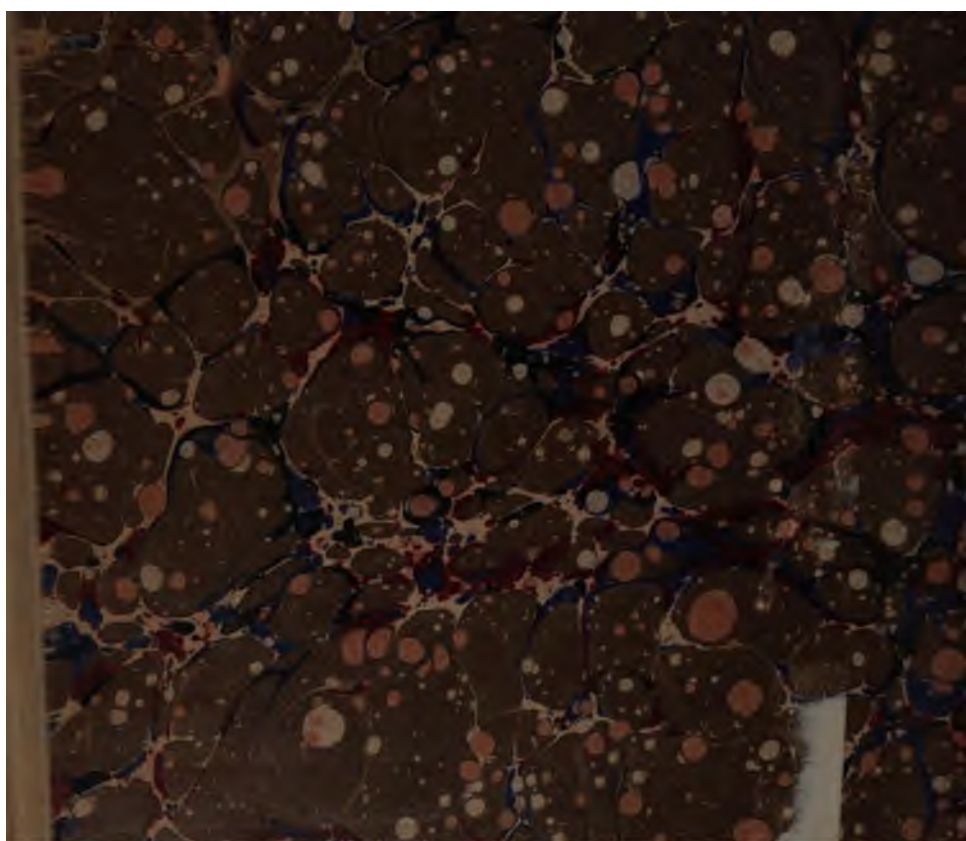
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